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ORIGINAL ARTICLES.

SUICIDE BY BLOWS AGAINST THE HEAD.

A Medico-Legal Study.[1]

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OF DUBUQUE, IOWA.

Although suicide, accomplished by blows against the head of such severity as to wound the contents of the cranium, is of very rare occurrence, it has been observed in a certain number of cases. Such self-murder requires more than ordinary energy, or insensibility to pain, for its execution, and these conditions chiefly obtain among the insane. There are recorded in medical literature a few instances in which the object was attained by blows on the head with a hammer or hatchet, or by driving within the skull a chisel or similar instrument. Certain of these cases, too, consist of persons who have tried to end their existence by other methods, less revolting, and have failed. Death from the self-inflicted wounds, or secondarily from the inflammation consequent upon them, as a rule, has been the final result. In the following paper I purpose to give as complete a series as I can, of cases illustrative of the remarks above, and to narrate more *in extenso* the history of a patient that came under my own observation.

The first case to be related is that of Dr. L. Langer.[1] A poacher, 37 years old, attempted suicide by beating his head with a sharp angle of an ax. There were found on the forehead, between the frontal eminences and extending into the hair, three wounds filled with crushed and splintered bone. The middle one was about two inches long, and showed at its bottom a half-inch fissure in the bone. There was also a Y-shaped wound above and behind the right ear, extending to the bone, a similar one just above, and a large swelling just below the occipital protuberance. The man recovered in two months.

Fourmet[2] relates a noteworthy case: A joiner had driven an iron chisel 3½ inches long and 3 lines broad up to its head by means of repeated blows from a hammer, into his cranium about the middle line. The patient became comatose, but, on the removal of the chisel in about seven hours, recovered within two weeks.

A remarkable case was published by Angenstein.[3] J. M., convicted of repeated arson and sentenced to imprisonment for life, was reported to have simulated epilepsy and insanity, and to have made suicidal attempts by inflicting superficial wounds on his neck and arms. In October, 1859, he drove two nails, 1½ inches long, into his frontal bone: these were with difficulty extracted by the forceps. In April, 1860, a similar attempt was made in the left parietal bone. He quickly recovered from the effects of each attempt. In September, 1860, he introduced under the skull a piece of wire. Signs of brain irritation followed this last wound, and a week later death ensued. The autopsy showed the dura firmly united to the skull at the place of the last injury, and the perforations through which the nails had been driven closed by membrane. There was purulent meningitis that had been caused by four needles that were found sticking into the meninges and brain. These needles had been introduced through the openings made by the nails.

A case presenting much analogy to the above is narrated by Dr. V. Biart.[4] It was that of a convict in the Kansas State Penitentiary, who attracted much attention among his fellow-convicts by boring a hole in his skull with an awl, and introducing therein pieces of wire. The physician-in-charge removed several pieces that had pierced both cerebral hemispheres. The wound of entrance was situated in the right parietal bone, near its posterior inferior angle. The patient stated at the time that he had passed other substances into his brain. Later he committed suicide by taking morphia; and at the autopsy his brain was found congested, and a wire three inches long and three-sixteenths of an inch thick was found running from the wound of entrance to the fissure of Sylvius. A flat nail one and three-fifths inches long was also found lying near the wire.

Carpenter[5] relates a similar case of an insane patient who sought in the following ways to take his life: First, he bored through his skull just above the right ear, and passed a heavy wire four and three-quarters inches into the brain. Second, he thrust an awl into the vertex. Third, through the first opening he pushed another wire to the opposite side of the skull, causing a left-sided hemiplegia that lasted fourteen days. Finally, after some months, he poisoned himself with morphia. At the autopsy a piece of wire two inches long and a threaded needle were found lying near each other in the middle lobe of the

[1] Read before the Julien Medical and Surgical Association, Dubuque.
[1] Wiener Med. Wochenschrift, 1878, No. 37, p. 999.
[2] Wiener Med. Wochenschrift (R. Frank) 1885, No. 15, p. 454.
[3] Ibid.
[4] Agnew's Surgery, vol. i, p. 294.
[5] Wiener Med. Wochenschrift, No. 15, p. 457.

right hemisphere, and in the frontal lobe were discovered a piece of wire two and one-half inches long, and a long headless nail.

Schauenstein[6] relates the case of a laborer who gave himself seventeen blows on the forehead and vertex with a hatchet, some of which penetrated the skull. Death from meningitis followed.

J. Fritsch[7] reports the case of a drunkard who cut down his child with a hatchet, wounded his wife dangerously and also struck himself several blows in the neighborhood of the right frontal eminence, in consequence of which he fell senseless. The wound healed perfectly.

Albert[8] gives the case of a joiner 32 years old, who struck himself in the right temporal region with a hammer. A large wound resulted. Patient became unconscious, tongue was deflected to the right. The next day there was return of consciousness, and in two months cicatrization of the wound.

Fabrice[9] reports the following case: A man who suffered much from headache dealt himself severe blows on the head with an ax, split his lower lip, wounded his throat, cut off a testicle, and on his recovery could not tell what impelled him to the act.

Zaggl[10] reports the case of a patient *in puerperio*, who attempted to suicide with a meat ax. There was contusion of the scalp on the vertex, with a stellate fracture and a bruised wound on the right parietal eminence.

E. von Hofmann.[11] A woman first stabbed herself in the liver, and as death did not ensue seized a hatchet and struck herself so many blows on the forehead and vertex, that she fell back senseless. When she was brought into the hospital, consciousness had returned; linear cuts with contusions of the scalp were found. Much suppuration followed, and the patient died of pyæmia. The autopsy revealed that the outer table of the vertex had been penetrated by the cutting edge of the hatchet.

Krugelstein[12] reports that a skeleton of a person who had run away from fear of punishment, was found in a wood. On the vertex was a wound evidently made by a hatchet that was lying near by.

Casper Liman:[13] A laborer long afflicted with melancholia, struck himself such heavy blows on the head with a flax-beater, that he died of their effects in a few hours.

Otto[14] reports the case of a jealous butcher, who first struck his head violently against a wall, then beat his head with an ax so long and heavily that he sank back senseless. Death from hæmorrhage resulted. The autopsy showed a hole in the frontal bone one inch long and two inches broad, with several depressions about it.

Maschka:[15] A woman 63 years old stabbed herself in the abdomen with a knife, then beat herself heavily on the head with an ax, and finally attempted to open the veins in the elbow. She died in six days from meningitis. The post-mortem examination showed a large fracture on the right side of the frontal bone.

Riambault[16] reports the following case: A man 53 years old, among whose relations were sixteen insane, and who suffered from severe headaches, was found hung in a barn. He had first cut his scalp with a pocket knife, then dealt himself heavy blows on the head with a hatchet, and finally hung himself. There were found, at the autopsy, a large fracture at the juncture of the parietal and frontal bones, and nine parallel incised wounds of the scalp.

Kupfer[17] reports the case of a man, 40 years of age, who was found drowned in the Spree. There was a history of overwork and anxiety, and a slight temporary mental aberration. There were found above and behind the right ear thirteen parallel wounds of the integument, some of which reached the bone. Over the left ear were many wounds with a large loss of substance, seventeen incisions being counted posteriorly, fourteen anteriorly. The bone was much splintered and fissured.

Krugelstein[18] records the following: On the head of a woman found hung were thirty parallel wounds, one half inch long. These were situated on the forehead and vertex and had penetrated the outer table. There were in addition some small parallel incisions in the cardiac region that, as they were suppurating, must have been three or four days old.

Von Haumeder[19] gives the case of a hostler, ill of typhoid fever, who was found hung. At the centre of the vertex was a sharp-walled hole two inches long and half an inch broad, at the bottom of which the bone was laid bare. Both hands were stained with blood. A short distance from the body lay a heavy hatchet, on which were traces of blood, and yet further off was found, near a pool of blood, a large hammer. An examination showed that there were at least sixteen blows directed against the head, seven of which penetrated the skull. There was typhus abdominalis in the ulcerative stage. The expert opinion on the case was that it was one of suicide; this opinion was founded on the facts that the wounds were of comparative insignificance from such heavy instruments, that they were parallel in their course, that they were all near each other, that there was no evidence of resistance, and that typhoid fever was present.

Howe[20] reports the case of a man who, according to the statement of his wife, first dealt her blows on her head with a pistol, then fired two shots upon her. He next attempted to blow his brains out, but as the pistol missed fire, he struck himself very violently on the head. Death from shock followed. The autopsy showed the right malar region suffused and penetrated by an incised wound one inch in length, two incised wounds in the right temporal region, nine on the vertex close together, a lacerated wound over the right ear, and one on the vertex, and a triangular cut

[6] Ibid.
[7] Ibid.
[8] Ibid.
[9] Ibid.
[10] Ibid.
[11] Lehrbuch d gericht. Med., p. 407.
[12] Wiener Med. Wochenschrift, No. 15, p. 456.
[13] Ibid.
[14] Ibid.
[15] Ibid.
[16] Ibid.
[17] Ibid.
[18] Ibid.
[19] Wiener Med. Wochenschrift, 1882, No. 18.
[20] Boston Med. and Surg. Journal, Nov. 8, 1883, p. 433.

on the arm. The patient had previously showed signs of mental aberration.

R. Frank's[21] case: This remarkable case, together with the result of the judicial investigation into it, I will relate more fully, as the history is of much interest from a medico-legal point of view:

In the Vienna Allgemeines Krankenhaus, Surgical Section, a woman 64 years old presented herself on the forenoon of September 28, 1884. Her statement was, that her wounds were self-inflicted and made by a hatchet. In consequence of her injuries she died on October 4. Except some mental hebetude, she did not show any cerebral symptoms. But because of her mental dulness, her ante-mortem assertion that her injuries were produced by her own hand was not deemed trustworthy, and a judicial investigation was ordered. It was elicited that the woman lived in easy circumstances, but was somewhat peculiar and secretive in habit. Her family energetically scouted the idea of suicide, and the wounds were explained by a fall from a chair or table while she was dusting pictures.

An examination revealed the following injuries: Hair in the anterior parietal and frontal regions abraded; a wound with ragged edges, four inches long, extending from between the eyebrows upwards and backwards, and forking above, was continued to the right an inch farther. This large wound had a stellate appearance, and at its widest portion was two inches across. On the left side of it were two smaller wounds, and on its right side were two others, incised and parallel, that penetrated the skull. Their walls were inflamed and purulent. Numerous smaller wounds were found on the right forearm, elbow, knee, and on the left knee. The frontal bone showed a fissure two inches long, half an inch wide. In addition, there were seven punctures that had more or less completely penetrated the skull. Besides the above named lesions, on the inner surface of the calvarium were found blood clots with fragments of bone. The anterior portion of the right upper frontal convolution showed degeneration, and was dotted over with small hæmorrhages. The rest of the brain was anæmic and soft, the ventricles contained a turbid fluid; there were clots in the sinuses and purulent meningitis.

The expert opinion of Prof. Hofmann in the above case was as follows:

1. J. N. died of purulent meningitis.

2. This was caused by violence through the above named injuries, especially by that reaching from the base of the nose directly backwards, forking posteriorly, and producing the fissure on the frontal bone.

3. This fissure, as well as the neighboring elongated and sharply defined wounds of the scalp, coursing generally from before backwards, was caused by vigorous blows with a sharp and heavy instrument, probably with a hatchet, and the number of blows must have been nine or ten. The straight fissure of the frontal bone, and the incisions at the posterior end, from the fact that between the cleft walls, large pieces of bone are wanting, and the walls of integument bounding the wounds can be recognized, must have been caused by two or more blows.

4. Since these numerous wounds were compacted together upon a comparatively small surface, and easily accessible to the hand of the patient, and were in the same direction from before backwards and almost parallel, and since some of them scarcely break the skin, therefore the suspicion is very strong that these injuries were produced, not by a foreign hand, but by that of the patient herself, for the purpose of suicide. This suspicion is confirmed by the circumstance that on the inner surface of both forearms, on the flexor surface of the left wrist and under both knees are, huddled together, numerous parallel superficial wounds that doubtless arose from an attempt to open the veins, and were produced by the hand of the patient.

A suicide caused by blows directed against the head is a rare event, yet one sometimes observed; and experience teaches that this extraordinary mode of self-murder is chosen chiefly by the insane; it is therefore to be justifiably suspected that this patient, while she was insane, accomplished the deed.

The last history of a case that I shall relate, is one that came under my own observation:

On December 16, 1885, Dr. G. M. Staples was called to see J. A. M., a short, thick-set German, about 45 years of age, of florid appearance, and stone-cutter by trade. He saw M. about 10 A.M., and found him sitting up in a saloon that adjoined his shop. The patient was semi-conscious, and had the appearance of a man somewhat intoxicated. On inquiry, it was found that he had left the saloon about 9 A.M., after drinking several glasses of beer. The proprietor stated that he had appeared considerably depressed in spirits, but returned to his shop to work as customary. Twenty minutes thereafter two gentlemen attempted to enter his shop to consult him about work, but found the door, which was partially glass, locked. Looking through the door, they discovered M. walking towards them with a long chisel protruding from his forehead; he stooped down and attempted to unlock the door, but after trying some minutes and appearing unable to turn the key, those from the outside forced the lock and entered. M. then said to them, "Drive the chisels further into my head," and then, shortly after, "For God's sake pull them out." The patient was immediately taken to the saloon above spoken of, a distance of perhaps forty feet, and walked thence with but little aid.

Dr. G. M. Staples was summoned at once, and found on his arrival the following condition:

The head of a small stone chisel was found protruding about three lines from the scalp on the right side of the head, at a point about one and five-eighth inches above the meatus auditorius, and one inch in front of a line dropped from the vertex to the meatus.

The point of the chisel had emerged on the left side, about one and one-quarter inches, at a point one inch above, and half an inch in front of, a vertical line bisecting the meatus. The length of the chisel was eight and one quarter inches, the diameter of its head, three-eights of an inch, and it tapered to a flattened point. A similar chisel had been driven

[21] Wiener, Med. Wochenschrift, Nos. 15, 16, 17, "Selbstmord durch Hiebe gegen den Kopf," von R. Frank.

perpendicularly into the centre of the forehead, five-eighths of an inch above the plane of the upper margin of the superciliary ridges, and had penetrated one and one-quarter inches.

The pupils were dilated, the left irregularly; the pulse was slow and full. Forcible traction with strong forceps was necessary to extract the first mentioned chisel, and an assistant pressing against the protruding point with a block of wood. The second chisel was bent to an angle of 20 degrees, five-eighths of an inch from its point, and was firmly imbedded on the frontal bone, requiring for its extraction, the greatest efforts with the forceps. Moderate hæmorrhage from the orifices made by the first chisel, followed. It is of interest to note, that a superficial puncture was discovered one-eighth of an inch above, and to the left of the point of entrance of the second chisel.

Absorbent cotton was placed on the orifices, the head was bandaged, and the patient sent to his home half a mile distant. After the chisels were removed the patient became more comatose, and at noon he could be but slightly aroused. The pulse continued slow and respiration was somewhat laborious and stertorous; there were signs of restlessness and rhythmical flexion and extension of the lower extremities. At 1 P.M. his restlessness became much more marked. He continually endeavored to arise in bed, and get upon the floor, requiring two powerful men to hold him down. His eyes were constantly closed, and the urine had been voided in bed. Morphia, ¼ grain, was given hypodermically.

At 4 P.M. Drs. G. M. Staples and Bready visited the patient together; he was then resting more quietly. The lower extremities exhibited rhythmical movements as before. Respiration continued labored and there were ecchymosis and swelling about the eyes. Pulse was 80 and pupils contracted. Deglutition was slowly and very imperfectly performed.

A rubber drainage tube was inserted, one and one-half inches into the right temporal orifice, and half an ounce of dark blood evacuated. The temporal wounds had been previously probed and bone, supposed to be the posterior clinoid processes, had been touched. After the tube had been inserted and the wound drained, the patient was visibly easier. The tube was padded with absorbent cotton and retained in the wound. The clothing and bed were saturated with the urine that had been involuntarily evacuated.

At 10 P.M. the patient was seen by Dr. Bready and the writer; he was found very restless, continually throwing himself about the bed. The pulse was 90 to 100. He indicated by motions a desire to urinate and passed water freely. Deglutition was quite impossible. He was given, hypodermically, morphia, $\frac{1}{3}$ grain, and atropia, $\frac{1}{120}$ grain.

The patient was seen by Drs. G. M. Staples and Bready at 8 A.M. on the following day; he had passed a comparatively quiet night, sleeping heavily. His respiration was 36, pulse 120, and fever, temperature 101. He could not swallow at all, fluids being retained in the mouth, and flowing out at the corners. Grumous blood, with some debris of cerebral tissue, kept slowly oozing from the drainage tube. Urine had been passed involuntarily during the night. Patient seemed to be sinking, and a solution of spts. ammon. aromat. was made to trickle down his throat.

At 3 P.M., he was again visited by Drs. Staples, Bready and Minges. He had died at 2:30 P.M. The dressings were removed, and a Nélaton probe with porcelain tip, was passed through the temporal wounds, from side to side, showing that the chisel had traversed brain tissue its entire length, after it had perforated the skull.

Although with our utmost persuasion, no autopsy was permitted, yet we were able to obtain very carefully made measurements. From these it was estimated that the first mentioned chisel must have penetrated the skull at the upper anterior angle of the squamous portion of the right temporal bone and lower margin of the right parietal traversing the base of his skull, in the region of the Sella Turcica, and emerging at nearly the centre of the squamous portion of the left temporal. The second chisel passed through the frontal bone, and must have entered the frontal lobe of the brain, at least half an inch. The mallet with which the chisels had been driven, was of wood, and weighed two and three-eighth pounds. It was covered with blood and presented about fifteen indentations, that, from their peculiar situation and correspondence to the heads of the chisels, were supposed to indicate the number of blows needed to accomplish the deed described. Inquiry into the patient's family history, failed to reveal any hereditary tendency to insanity; it was discovered, however, that he had been greatly concerned about some business matters, that he was a hard drinker, and that he occasionally showed depression of spirits.

In the absence of an autopsy, any statement as to the particular cerebral structures wounded, is at the best, mere conjecture; but after careful study and measurement, on the subject, I have arrived at certain conclusions, and I give them to the reader for what they are worth. It is my belief that the first chisel penetrated the right tempero-sphenoidal globe, or entered the fissure of Sylvius, passed just below the Island of Reil, traversed the lenticular nucleus, internal capsule, and right optic thalamus. On the left side it must have passed a little lower through the substance of the tempero-sphenoidal lobe. That the region about the Island of Reil was not injured, I hold to be probable, by the fact that no aphasia existed.

The internal capsule being a part of the pyramidal tract, the course of nervous influence through it, from the cortical centres of motion, would be more or less modified and this, it may be, was the cause of the rhythmical motions exhibited by our patient. If, as was thought, the posterior clinoid processes were fractured, there probably resulted pressure on the pons; and if the patient had lived any time, the issue would perhaps have been similar to that of a case related by Belhomme.

In this case an exostosis from these processes pressed upon the pons; the patient was subject to attacks of vertigo, and impairment of the motion of the legs, followed by forced movements from left to right. Towards the close of the case, convulsions and rotary motions from left to right ensued.

From the lesions in the lenticulo-striate region, we would expect that the senses of vision and olfaction would be impaired, though this, in our case could not be ascertained. A wound in this locality according to Ferrier, would induce dilatation of the pupils, a phenomenon which we noted in the case of M. A wound in the tip of the frontal convolution would not be followed by any marked effect.

Such wounds as those in our case belong to the punctured or perforating variety of wounds of the head; of this class there are but six reported in the large surgical volumes of the "Medical and Surgical History of the War of the Rebellion," and in no one of these was there absolutely complete perforation. Five of these patients were wounded by a bayonet, one by a sword, one survived, permanently disabled, five died with extravasation of blood in one case, cerebral hernia in one, encephalitis in one, and abcess of the brain in two cases.

As to the treatment of our case there is little room for discussion. All surgeons will agree that the immediate removal of the foreign bodies was indicated. The best authorities, too, are in favor of establishing and maintaining the most complete drainage possible. Dr. Harlow who treated the famous tamping iron case, says that it was due in great measure to the free outlets in the skull above and below, that the man Gage owed his life.

In wounds of the head where the skull is perforated the mortality is always very high, no authority giving it as less than 80, and some giving it 100 per cent. "If death follows in twenty-four or thirty-six hours, it will be from shock and the extravasation of blood and serum, when the fatal result is longer delayed, encephalitis or abscess will ultimately prove fatal. When the projectile remains within the cranium, the danger is greater than when it passes through or perforates, as in the former case there is one foreign body more in the cranium. The statistics of our late war show a difference of 5 per cent in favor of perforating over penetrating fractures, the mortality in the former being 80 per cent. and the latter 85.5 per cent."[22]

A study of the above cases shows that death often does not result from the immediate effect of the injuries, more often the patient either gets well of them, dies from the resulting inflammation, or tries some other method of suicide. Another lesson to be drawn from these cases is, that even heavy blows against the head do not necessarily produce concussion of the brain.

In a given case, the diagnosis between murder and suicide may be of great importance, and attention to the following points, will be of use:

1. The situation of the wounds must be one readily accessible to the hand. The majority of these injuries, as the cases given above attest, are situated on the frontal and parietal bones, more rarely on the temples, very rarely indeed upon the occipital bone.

2. Usually more than one wound, frequently many, are found. It is easily comprehensible that the first blows are made somewhat cautiously, and being comparatively unimportant, do not render the suicide incapable of completing the act.

3. The injuries are, as a rule, huddled together in a comparatively small space, and take a parallel course. This is easily explained by the quick motion that has been taken by the hand. This disposition of the wounds almost characteristic, is one of the most constant and weighty signs to which our attention can be directed.

4. Heavy strong instruments are regularly used. If they are blunt, fewer wounds are to be looked for, as unconsciousness would be the more quickly induced.

5. In many of these cases, other injuries made with suicidal intent, or traces of them, can be found in other portions of the body.

6. Signs of resistance or non-resistance, should in every doubtful case be looked for. Regularity of the wounds, and a grouping together of them, are not compatible with resistance.

8. The history of the patient, as concerns the mental state is always of importance. Most of these suicides had shown aberrations of intellect, perhaps of a transitory character, and hereditary taint came often into play. Delirium and cephalalgia were also the causes in one case each.

It goes without saying, however, that to avoid an error of diagnosis, all the circumstances in a given case must be carefully considered.

[22] Agnew's Surgery, Vol. i, p. 290.

SURGICAL METHODS FOR THE RELIEF OF PRURITIC RHINITIS (HAY FEVER).

BY THOMAS F. RUMBOLD, M.D.,
OF ST. LOUIS, MO.

My method of ascertaining who will require operative procedure, is to treat by the spray producers *every case* for a few days, giving from ten to fifteen treatments. From the effect of these applications, I judge whether or not the case will require severer measures. It is seen that I operate on as few patients as possible, because I fear the effects that will follow the formation of scar tissue in the nasal cavities. I do not wait until the pruritic season has passed away, but operate as soon as I find that the spray producers will not prove effective.

Relief by Surgical Measures.—This consists in the removal of the diseased, hyperæsthetic mucous membrane that covers the turbinated processes and portions of the septum nasi. This is best done by means of Jarvis's wire snare, or some modification of this valuable instrument.

I prefer this instrument to the galvano-cautery, because it can be employed to remove even an extensive hyperplasia of the turbinated processes without leaving a large cicatrix, certainly not the one-tenth of the size of the portion removed.

To be enabled to apply this instrument with comparative ease to the patient, a nasal speculum will be required. With it the passage can be dilated to some extent.

I have had a nasal speculum made that has handles eight inches long. It is illustrated in Figure 1.

Such a length enables the patient to hold the instrument in position in the nasal passage, thus allowing the physician to use his hand for other purposes. If the patient does not hold the instrument in the best position for complete inspection—and they seldom do at first—the physician must properly adjust it. Thus held, it will be far more comfortable for the patient than if the physician were to hold it, and the parts will be fully as well seen.

If this is the case why cause great discomfort, if not excessive pain by employing a self-retaining nasal speculum?

To apply the wire snare, the nostril should be dilated to its utmost, and the loop passed in with its transverse diameter held vertically. It will not be possible to prevent the wire from touching both the septum and the turbinated process, which may excite sneezing. If it does the loop will have to be withdrawn, and a new attempt made.

Placing the wire loop around the growth is difficult to accomplish, and frequently requires great patience and dexterity. The loop is slowly passed into the nostril, and made to surround the growth. If this is large enough to protrude a quarter of an inch, it may

FIG. 1.—NASAL SPECULUM, eight inches long, with reversible blades. This length is given it to enable the patient to dilate his own nasal passage.

FIG. 2.—Modified Jarvis Wire Snare.

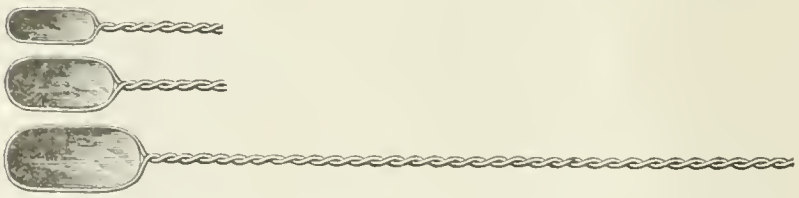

FIG. 3.—ANTERIOR NASAL MIRRORS.—The mirrors are represented full size. The handles are five inches long. The desired angle may be given to each mirror by bending the wire handle near the glass.

FIG. 4.—PHARYNGEAL MIRROR.—By pressure on the lever on the handle the mirror may be made to take any desired angle, thus reflecting the posterior, superior and anterior surfaces of the pharyngo-nasal cavity, while rotation on its axis reflects the lateral surfaces.

FIG. 5.—SOFT PALATE RETRACTOR.—A, lever to separate arms. B, the soft rubber band that closes the arms and holds the uvula out of the operator's way. C, the lever that raises the wedge. After the instrument is introduced behind the velum and the arms spread by the lever A, then the wedge retains them in position

One of the blades of this speculum is flatter than the other, the flatter one should be applied to the nasal septum, and when the other passage is to be inspected the blades are to be turned over or reversed, as shown by the dotted lines in the illustration.

I employ this speculum in all operations in the anterior nasal passages and during all applications of the spray producers to the anterior naris.

be easily surrounded by the wire. As soon as it is ascertained, by slight traction, that the wire is engaged, the milled nut is slowly turned, time being given for the wire to sink into the hyperplastic and partially œdematous tissue, as it always does; and in about half a minute the nut should be again turned partly around. As soon as it is ascertained that the loop has a good hold on the growth, the patient

should be directed to take hold of the instrument with the left hand. He should then turn the nut so slowly that he experiences but little pain.

An important direction, is to keep the end of the instrument, from which the loop extrudes, held close to the outer wall of the nostril. If this is not done, the loop will slip off over the anterior extremity of the hyperplastic growth. It should be borne in mind. that the loop seldom slips off over the posterior extremity of the growth.

It generally takes about half to three-quarters of an hour to remove even a small enlargement, while for one of so great dimensions as to fill the nasal passage, from one to three hours are required. The only sure guide is not to cause too much pain.

When the instrument has cut itself out, if the patient does not blow his nose—which he should not do—there will be no loss of blood, or at least but very little. This insures a small scar, one about the size of a large pin's head.

Not unfrequently the hyperplasia is a rounded body only, such as the wire loop will not take hold. In this case I have taken the needle of a hypodermic syringe and transfixed the growth and then placed the loop over it. This gives the wire a hold on the tumor. Since then I have had long needles made, taking my pattern from some I saw in the hands of Dr. Jarvis, in June, 1882.

This led to the idea of having the needles so attached to the ecraseur, that they could be used after the loop of wire was placed around the growth. Figure 2, illustrates the instrument I have had made for this purpose.

In some instances I find that this snare, as modified by me, has a little advantage over the original Jarvis snare, but in very many cases I use the Jarvis snare, with his needles in the place of this instrument. The modification consists in the following:

1. The excising nut is placed at the outer extremity of the instrument, so as not to intercept the surgeon's view of the parts to be operated upon.

2. A ring is employed for holding the instrument. I prefer the patient to hold the instrument while the excision is being performed, as he can do so far more comfortably to himself than can be done by any one else, I also direct him to turn the excising nut. As the exision should be performed slowly—to prevent hæmorrhage and the foundation of an extensive cicatrical surface—his sensations are the best guide as to the speed of the cutting process. As the pain lessens he is directed to turn the nut; and the placing of the nut on the outer extremity of the instrument, I have found to be a little more convenient also for the patient.

3. The wire holder is a rod, not a tube. There is not the least advantage in this, but this is required if the excising nut is placed on the outer extremity of the instrument. This rod is long enough to extend beyond the inner extremity or operating end of the instrument, and the portion thus protruding has a small opening in which to fasten the excising wire. After the wire is firmly attached, the extremity of the rod is then drawn into the barrel of the instrument, leaving the loop of wire extending one inch, more or less from the instrument, and ready to be applied to the hypertrophied tissue to be removed.

4. Two needles are permanently fixed on a perforated slide, which moves easily on the instrument and is seen next to the ring. To make the needles take the right direction, their points pass through a guide that is also slipped on the instrument, but at its outer extremity. This guide fits so tightly on the instrument that it does not leave its place while the needles are being pushed through it by the finger of the operator applied to a perforated slide, which, as has been said, moves easily on the barrel of the instrument. This mechanism insures the needles taking the desired direction.

5. The instrument is bent on itself, at the location of the perforated slide. This is done to make a sufficient angle to prevent the nut from interfering with the operator's view of the parts inspected. The illustration given above does not indicate this angle very clearly, as the instrument is made to lie on its side to show the ring.

The Galvano-Cautery.—Every one has a favorite manner of applying the galvano-cautery. Some allow the platinum to become almost white-hot before passing it into the nasal cavity. I did this on several occasions, to my patient's detriment, the radiating heat being so great as to cause acute inflammation of the whole cavity and great swelling of the face. The electrical energy should be sufficient to make platinum white-hot in one second of time while held in the air. Of course if the current was allowed to continue, the wire would be burnt through in about three or four seconds, but when the electrode is laid on the tissue, this keeps the wire from becoming sufficiently hot to be destroyed.

I prefer to place the electrode on the spot to be cauterized and then make the connection with my foot, never using my finger or thumb for making the connection, as this would necessitate holding the instrument so firmly in my hand that I could not be certain of the degree of pressure I was making on the part being burned.

Immediately on the withdrawal of the electrode, I spray the cavity with spray producers Nos. 2 and 5, employing the vaseline comp. given on page 497, October 30. This will have a soothing effect, but if the patient still complains of the distress from the burning, I apply the oleate of cocaine. This is an excellent preparation, and produces a much more lasting effect than the solution. The strength that I now employ is 5 per cent.

The next day the patient should receive the regular treatment with the spray producers.

As soon as the patient can endure a second application of the cautery, it should be applied. Generally one or two applications a week can be borne without great discomfort.

Caustic Applicators.—The applicator that I have most frequently used, has been a silver probe. When I desire to use chromic acid—which is very seldom—I heat the point of the probe and then touch it to a crystal of chromic acid; the crystal instantly melts and coats the probe point, and the instrument is then ready for use. Cocaine, a 5 per cent. solution, should

be applied to the parts frequently for half an hour before the acid is applied. Care must be taken not to hold the acid too long on the part to be destroyed; but just to touch the parts is quite sufficient. The spray of vaseline, with No. 2 spray producer, should be applied immediately after the touch is made.

Crushing.—I have grasped the sensitive portions of the membrane with a slender, but strong pair of forceps, maintaining the hold on the membrane for two or three minutes, first spraying the parts with a 2 per cent. solution of cocaine. The results are quite satisfactory.

Locating the Diseased Membrane.—In locating the hyperæsthetic spot or spots, I employ, if possible, a small reflector (Fig. 3.) if it can be passed into the anterior nares without producing much, if any, irritation, using, at the same time, a nasal speculum. I then insert a probe, bent slightly at the point, and ascertain according to the method employed by Dr. Roe, of Rochester, N. Y., the location of the most sensitive spot known by the patient experiencing a *burning sensation.*

Nitric Acid.—I have used nitric acid but once. The disturbance occasioned by its application was so great that I think I will not use it again.

Posterior Nares.—If the posterior portions of the turbinated processes or the septum nasi are to be inspected or operated upon, I hand the patient the tongue depressor and direct him to hold his tongue down with it, using his left hand. If the space between the porterior wall of the pharynx and the soft palate is sufficiently large, I place the pharyngeal reflector (Fig. 4.) back in the fauces to get a reflection of the posterior extremities of the inferior and middle turbinated processes and the septum nasi, using my left hand, leaving the right hand for the manipulation of the diagnostic probe, the electrode, the Jarvis snare, or the chromic acid probe.

If the volume hangs too close to the posterior wall of the pharynx, I hook the pendent portion with the spreading soft palate retractor (Fig. 5). Before drawing the palate forward, I spread the limbs of the instrument a little, and then draw it slightly outward. I then lift the right hand of the patient to the handle of the instrument and direct him to draw it as far forward as he can without causing unpleasant sensations. The patient can hold the instrument very much better than an assistant, as he knows how to control it so that it will not cause him to retch or occasion pain.

The reflection from the pharyngeal mirror will assist the operator in locating the sensitive spots, and in adjusting the Jarvis snare.

In making all caustic applications to these parts I employ the same methods.

A CASE OF PURULENT INFLAMMATION OF THE MIDDLE EAR WITH BRAIN COMPLICATIONS.[1]

BY BOERNE BETTMAN, M.D.,
OF CHICAGO, ILL.

Acute purulent inflammation of the middle ear is certainly a very common occurrence, and in the majority of cases runs its course in a few weeks without any complications. In some instances, however, the inflammation invades adjacent parts, and may give rise to very annoying, and even serious and grave results. Cases are on record where the inflammation has spread to the brain, giving rise to severe meningitis and death.

I will report one of these complicated cases, with, fortunately, a happy termination.

On April 1, 1885, I was kindly asked by Dr. Doering to examine the ears of a young lady, æt. 18, suffering with an acute purulent otitis media. The patient had contracted a severe cold five days previously. Two days later she complained of pains in the ears and loss of hearing. Counter-irritation, in the form of blisters to the mastoid region, and instillation into the ear of mild astringents, had been ordered by the attending physician. The young lady also employed a warm water spray very energetically, hours at a time, as she told me afterwards, to ease the pain. When I first examined her, the discharge from one ear had lasted three days, from the other ear but a day or two. Her condition was as follows:

Aur. sin.—Discharge of sero-purulent matter. M. T. very much injected, large perforation on its lower posterior quadrant.

Aur. dex.—Profuse discharge of creamy pus mixed with blood. M. T. almost totally destroyed. Mucous membrane macerated and very succulent—the slightest touch with a probe producing hæmorrhage. Watch was not heard when placed against auricle, mastoid and glabella Loud conversation was understood only when spoken directly into the ear. The otorrhœa was so profuse that the cotton batting over the ear had to be changed every half hour. I recommended frequent cleansing of the ears with lukewarm water and peroxide of hydrogen, also the instillation three times daily of the following solution:

℞. Zinc sulph..... 0.20.
Acid carbol..... 0.40.
Aq. dest..... 30.00.
M.

The discharge from the left ear ceased in one week, with perfect restoration of hearing. Two small furuncles which appeared later on at the mouth of the external auditory meatus yielded to warm applications. Several granulations in the right tympanum were destroyed with nitrate of silver.

April 12. Patient complained of pain in the right mastoid region. I sent her to bed and ordered cold applications to the part. She soon obtained relief.

April 14. Severe frontal headaches caused much distress. The discharge from the right ear was less. Temperature not much increased. Prescribed soda salicyl. grs. 10 every three hours.

April 18. A slight internal strabismus of the right eye was noticed. Temperature but slightly elevated.

April 21. Dr. Doering examined the case with me. We found little change in her condition. Otorrhœa less, but still profuse. Temperature 100. No tenderness in mastoid region; frontal headaches. The doctor concurred with me in the opinion that the inflammatory process had invaded the brain, in

[1] Read before the Chicago Society of Ophthalmology and Otology.

all probability through a dehiscence in the tegmen tympani. Pressure on the abducens nerve by exudative material would account for the strabismus. Ice bags, which had been applied to the head since two days, were continued, also the cleansing of the ear with the oxygenated water. Salicylate of soda was discontinued. Being troubled with dysmenorrhœa, bromide of potash and tincture of gelsemium were recommended by the family physician.

April 22. Headache was intense. She was supported in a half reclining position by pillows; she could not lie down, owing to the severe pain in the head. Vomited frequently after taking food.

April 23. Discharge from ear much less. Slight pain in the mastoid again quickly subsided on the application of ice bags.[1]

April 24. No pain in mastoid region. Frontal and occipital pains less violent. Vomited once or twice during the day.

April 26. Motion of ext. rectus much better; lachrymation ceased. Conjunctival injection of right eye entirely gone; it had existed but a few days. Right ear perfectly dry.

April 28. Appetite better; pain in head less; slept better.

April 29. Very little headache all day, slight during the night, and pain confined now to the left side of head.

May 1. Slight headache on left side. Slept well, discarded supporting pillows. Left eye epiphora. Temperature and pulse normal.

May 14. Out of bed. Diplopia produced only when the eye is turned far to the right side.

June 1. Eyes normal. Hearing on the left side normal; right ear, hearing $\frac{20}{30}$. The points of interest attached to this case may be classified as follows:

1. Constant poulticing in this form of disease is reprehensible practice, and fraught with destructive changes. The patient, contrary to the physician's instructions, applied a spray of warm water, hours at a time. The natural result was a maceration and breaking down of the tissues, accompanied by intense engorgement of the vesssls and infiltration of the surrounding parts. Granulations and consequent suppuration completed the picture of a most intense acute inflammation. All forms of continuous poulticing must be carefully avoided unless it is desired to favor suppuration.

2. The invasion of the cranial cavity is not at all a frequent accompaniment of otitis media purulenta acuta, neither is its termination usually as favorable as in the recorded case. We know that the osseous partition between tympanum and cranial cavity is extremely thin, and in some instances natural fissures exist in the tympanic roof, covered only by the mucous membrane. This naturally favors the progress of the disease by direct continuity of tissue and involvement of the meninges. In chronic forms of the inflammation these complications arise only after the bony barrier has been broken down by the protracted process of caries and necrosis.

3. The relief obtained by the application of ice bags to the mastoid was immediate, and substituted the ordinary method of applying fomentations. Last spring I had six or eight cases of acute inflammation of the middle ear accompanied by slight puffiness and extreme tenderness of the mastoid region. I regarded this as a slight periostitis, or rather congestion of the bone covering, associated, perhaps, with a hyperæmia of the mastoid cells. These cases yielded very readily to the cold applications. In one instance the puffiness was extensive enough to push the auricle forwards, usually indicative of a severe inflammatory process in the mastoid. The pain was intense, temperature high. The condition certainly justified a Wilde's incision, but before resorting to operative interference I resolved to try Leiter's tubes. They were kept *in situ* forty-eight hours, with the most satisfactory result. The complication rapidly disappeared.

I invariably order cold compresses or Leiter's tubes to the mastoid, as soon as the slightest tenderness is experienced. This procedure restricts, localizes the inflammatory process to the tympanum. Warm applications in the early stage encourage increased blood supply and infiltration of the tissues. The inflammation is thereby induced to invade adjacent parts.

[1] Dr. H. A. Johnson kindly saw the case with me on two occasions during the absence of Dr. Doering.

A CASE OF PSEUDO-MEMBRANOUS LARYNGITIS TREATED BY ELECTROLYSIS.[1]

BY F. E. WAXHAM, M.D.,

PROFESSOR OF DISEASES OF CHILDREN, COLLEGE OF PHYSICIANS AND SURGEONS, OF CHICAGO.

Almost every organ of the human body, when in a diseased condition, has been subjected to the influence of electricity. The urethra, the prostate, the ovaries, the uterus, the brain, the liver, and the spleen, have all been treated by this silent, strange and powerful agent. Until recently, however, the larynx has not been invaded. If it be true that strictures of the urethra can be cured by the galvanic current; if it be true that enlarged prostates can be reduced, and fibroids of the uterus successfully treated, it has occurred to me that stenosis of the larynx from membranous exudation might be reduced in the same manner. If false membrane can be destroyed or detached in this manner, it will be a great advance in the treatment of one of the most distressing, frightful and dangerous diseases of early life. The thought that this is a field worthy of investigation is the apology I make for this brief report.

On October 26 I was called to see Esther J., a little girl of eight years. The little patient had been sick nearly a week with membranous croup, and had been attended by Dr. E. C. Helm. The patient was also seen by Dr. Sanders. The child was in a most desperate condition, and all hope of recovery had been abandoned. The pulse was rapid and feeble, the face of a deadly pallor, the lips livid and the respiration laborious in the extreme. The child was in the last stages of asphyxia, already semi-comatose, and was roused with difficulty.

[1] Read before the Chicago Medical Society, December 6, 1886.

An intubation tube was threaded with platinum wire and used as a negative electrode. At 5 P.M. the tube was introduced into the larynx without difficulty, and the respiration at once became easy. The child was soon resuscitated, and after coughing out considerable softened membrane and ropy mucus, once more became conscious of its surroundings. The platinum wire was now insulated by passing it through a very small rubber tubing. The platinum wire projecting from the tubing was now attached to a twelve-cell McIntosh galvanic battery. The positive electrode consisted of the ordinary sponge, which was moistened with warm water. The sponge was placed over the larynx, and a current from ten cells employed. This current caused some pain and considerable redness of the skin under the sponge. The current was reduced to eight cells, which was borne more comfortably and was passed five minutes, during which time considerable mucus and softened membrane were expelled. The tube was now accidentally withdrawn and the respiration appeared very easy without it. The little patient, who had taken no nourishment for several hours, and but very little for two days, now drank eagerly two glasses of milk, and passed into a quiet sleep. At 7.30 P.M. I was again called and found the respiration becoming labored. The tube was reintroduced and electrolysis again performed in the same manner. A current from eight cells was first employed, and then from ten, the sitting lasting ten minutes and the current causing some discomfort. One could not doubt the effect of the current upon the false membrane, for it was rapidly detached and expelled in small patches, together with considerable ropy mucus. The tube was removed and the respiration was again comfortable. The child seemed bright and interested in those about her.

Nine P.M.—Sleeping soundly. Pulse 140, temperature 103°, respiration 32. The respiration, although noisy, was not labored. The voice, which had been suppressed and whispering before the operation, now became louder, and the cough, which had been smothered and husky, became stronger and clearer. The respiration as well as the voice and cough indicated swelling of the mucous membrane about the vocal cords, rather than the presence of membrane. At 10.30 P.M. gave tr. opium gtt. vi *per os*, antipyrin gr. xii *per rectum*, and cold applications applied to the neck.

At 11.15 P.M. temperature 102, pulse 120°, respiration 32. The little patient took nourishment well and was left feeling quite comfortable.

At 2 A.M. I was again called and found the respiration labored and the dyspnœa well marked. Not feeling justified in experimenting further with the patient, electrolysis was not again employed. The intubation tube was introduced and left *in situ*, giving the child immediate relief. No membrane was expelled when the tube was introduced. There were now evidences of pneumonia, the respiration being rapid, although perfectly easy, the temperature high, and increased fremitus over both lungs.

Eleven A.M., pulse 150, temperature 105½°, respiration 40, taking nourishment fairly well, but restless and very thirsty. Directions were given to sponge the child frequently with cold water, and antipyrin was given in 15 gr. doses, *per rectum*.

Three P.M., pulse 150, temperature 105½°, respiration 40. Growing weaker and taking but little nourishment. Five P.M., pulse 150, temperature 103°, respiration 60. The respiration, although rapid, is perfectly easy. The patient restless and refuses all nourishment. Nine P.M., pulse very rapid and feeble, temperature 104½°, respiration 64.

The little patient died at 2 A.M.

It was expected that the galvanic current would have little or no effect upon the false membrane, but we confidently hoped that it would relieve the congestion and swelling of the tissue. Contrary to expectation it certainly seemed, to one watching this case closely, that it had a most decided effect in loosening and detaching the membrane, but that the secondary effect was to increase the swelling and congestion.

In this connection the result of a few experiments may not be uninteresting. Wishing to observe the effect of the galvanic current upon the healthy larynx, two rabbits were subjected to electrolysis, with the assistance of Dr. Bütner. The first rabbit, a half-grown one, was given chloroform and the tube introduced into the larynx with considerable difficulty, on account of the small size of the mouth. The attachments were made and a current from eleven cells was passed for five minutes and the tube removed. Some dyspnœa followed the operation, but it was attributed to the rough usage to which the larynx was subjected, rather than to the effect of the current. The dyspnœa gradually subsided and the rabbit recovered.

The second rabbit was given a current from eight cells, in the same manner, and seemed to suffer no inconvenience.

No deductions can be drawn from the report of a single case, but we may express the hope that this subject may be still further investigated. It is possible that too strong a current was employed, or possibly the current was not of sufficient strength. It may be necessary to employ a current that will verge on cauterization, and employed with an anæsthetic. These queries, however, can only be answered after further investigation.

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TRANSPLANTATION OF TEETH.[1]

BY WM. N. MORRISON, D.D.S.

OF ST. LOUIS, MO.

I will give the history of one very interesting case. In the *Missouri Dental Journal*, of July 15, 1882, is a paper by me upon this subject, and among other cases reported is a prospective case which presented itself last fall: A young lady of slight build, about 22 years of age, teeth not of extra quality, arch perfect, and articulation correct, except the left-erratum; read right- instead of left-side of the mouth;

[1] Read in the Section on Dental and Oral Surgery at the Thirty Seventh Annual Meeting of the American Medical Association.

superior canine, which was missing. The left-central was very loose. On careful examination I found it to be caused by the absorption of the root below the cervical line, by the crown of the canine, which lay horizontally in the process with its point to the median line, entirely across the root of the central, the latter being as thoroughly absorbed as though it was a deciduous tooth.

I had decided to extract both and transplant the canine to the socket of the central, after enlarging and deepening it to correspond to the root of the canine; after the canine had become fixed, if the crown could not be made to look as well as a central, I intended to cut it off and substitute a porcelain crown with a metallic pivot; but this heroic operation was indefinitely postponed by reason of the young lady being called home from our city.

This case is all the more wonderful from the fact that six dentists had already identified themselves with it; two of a neighboring city told her it had been broken off by blow or fall. Although previous to that decision one had constructed and adjusted regulating plates which were worn for months; exostosis being assigned as reason for enlargement; but a tooth never until I demonstrated it. Such was the case up to the time I first saw it, and gave my diagnosis and plan of operation. Other members of the patient's family had their favorite dentists, and she was taken to one and my plan duly explained and criticised; it was pronounced an impossible, impracticable and dangerous thing, but my diagnosis was pronounced correct so far as the canine was concerned, and its extraction was urged; to make this decision more forcible another was called in consultation, and they administered ether, and gouged away the process, exhausting themselves and the patient after breaking off a piece of the crown.

Further operations were postponed till some days later, when Dr. —, who was called to use his persuasive powers and hold her hands, renewed hostilities, but with no better success. About three weeks later she was taken by the above or by their order to Dr. —, who administered gas and extracted the canine, which was laid away to dry, and the patient assured that the central would grow firm again and be as useful as ever. When the root was entirely absorbed and the crown only suspended by slight attachment to the gum, the patient returned to her home, carrying with her the extracted canine trophy. All this occurred in the fall of 1881, and I had no knowledge of it until the discussion of my paper in the St. Louis Dental Society.

Now two years later, or three years after I first saw the case, the patient came to see if I would not transplant her right lower canine in the place of the upper central. The canine was condemned to extraction by another dentist, as its occlusion against the superior lateral was forcing the lateral out of place and making it assume an unsightly angle to the others. The central was hanging loosely to the gum and had been for three years, the other teeth supporting it latterally, and the lip and tongue antero posteriorly; the patient was in constant dread of swallowing it, particularly at night. Contrary to the opinion of my brother dentists in the society, and statistical evidence collected from best dentists all over the country, (see discussion of the paper, *Missouri Dental Journal*, page 247, July 15, 1882), the operation was performed; the loose tooth was removed and with a drill, (using cocaine). The process was opened up exactly in the track of the root which should have been there; at any rate I expected to find a piece of the root, but not a particle was there; with drill and fissure buri enlarged and deepened the socket quite to the floor of the nose, and antero-posterially from plate to plate; and remember the anterior plate was cicatrical bone and not any to spare at that, owing to former extractions of canine, above described; the teeth and general shape of the socket being now known. The right lower canine was extracted, and root vessels removed, and canal filled with gold wire, and a prominent contour filling built upon its distal face or long angle, with platinum gold, which made the median edge of the new right central which it was to be. The root was long, and instead of being round as its predecessor, was oval or flattened on the sides, it was a fortunate thing that there was a thin scale of plate left upon the labial side when the socket was enough enlarged to receive the root.

A black rubber splint capping the crowns was worn about four weeks, shielding that tooth from injury; no unusual results followed; it was speedily taken into fellowship without an unfavorable symptom. The right lower first bicuspid was much within the arch, and by forcing it out with a jack-screw it performed excellent service as a canine. By this operation, although not as good as the one first contemplated, this beautiful young lady is spared the uncomfortable and humiliating necessity of wearing an artificial appliance, and has her own home-grown natural teeth distributed where they will do the most good.

MEDICAL PROGRESS.

Iodoform Gauze in Gynecology.—In *Volkmann's Sammlung*, No. 288, Fritsch, of Breslau, gives the manifold uses to which he puts iodoform gauze in gynecological practice. A 10 to 50 per cent. article is made, and the former may be easily made stronger in iodoform by incorporating the gauze with more iodoform, either in powder or in solution with ether, or in form of a glycerole. Iodoform gauze should be the only substance used in making tampons. In aseptic cases these tampons may remain *in situ* for ten days without showing any signs of putrefaction. In making these tampons a strip of gauze five cm. broad and two m. long is cut off, folded upon itself fan-shape, and inserted by means of the hand or dressing forceps, the end being allowed to hang out of the vulva. Simply drawing on this end will unravel the tampon and remove it without pain or inconvenience. At the head of palliative cancer treatment he shows the great advantages of making use of iodoform gauze tampons. Formerly, in bleed-

ing and ulcerating cancer, irrigation was used for the double purpose of disinfecting and removing the offensive secretion. If the hæmorrhage was considerable a tampon soaked in liquor ferri was introduced. In twenty-four to forty-eight hours this tampon had become offensive, and if its removal was delayed to the third or fourth day it was a mass of putridity. It had become hard, was removed with great pain and difficulty, its removal was followed by a mass of offensive coagula and discharge, and it left the vagina irritable and contracted.

In *ædème* and cauterization the iron tampon was applied to the oozing surface, to stop the hæmorrhage. If the tampon was well applied it accomplished this object, but if it was simply packed up into the vagina, the hæmorrhage continued, the tampon had to be reapplied, or the patient died from loss of blood, as he has had an opportunity to observe in two cases. This procedure is certainly not one of ideal perfection, and from a theoretical standpoint grave objections can be brought against it. Instead of introducing fluids into parts already bathed in profuse discharge, a method by which the secretions are absorbed, disinfected and restrained would seem more rational, especially if it combines the advantages of less frequent dressings. He makes use of the following dry method of treating cancer: A small Sims' speculum is introduced, the vault is stuffed with gauze, the gauze is then stuffed round about the portio so that it lies imbedded in iodoform gauze. It is not necessary to use great quantities of gauze in this dressing, for it may be stuffed up very loosely. If, however, the cancer is ulcerating, the gauze must be firmly packed into the cavity. If one piece of gauze is not sufficient, several may be used, the ends being made to hang out of the vulva. In most cases an astringent adjuvant becomes necessary. Tannin and iodoform are intimately mixed, and the gauze filled with the powder and then packed into the cavity. A tampon of this kind stops hæmorrhage, checks secretions, it disinfects, absorbs, and has an anodyne effect. It can be kept *in situ* four or five days, and may be removed easily and without pain. The advantages of this method are very apparent after an operation. After the cancer has been scraped with the spoon and cauterized with the thermo-cautery, the cavity is tamponed with iodoform tannin gauze, or it is first filled with the powder and the tampon applied over the powder. This dressing is left unchanged for five to six days, and is then renewed. If the hæmorrhage is obstinate, glycerine may be added to the powder, iodoform, tannin, aa 10, glycerine 200, and the tampon soaked in it. As soon as the tampon is no longer stained with blood, the dry treatment is resumed. In this way cancer may be kept free from smell and discharge until the death of the patient, the tampon, even in large and profusely secreting cavities, being changed only twice a week.

Iodoform gauze may also be inserted into the cavity of the uterus. In puerperal metritis, with offensive discharge, the womb is syringed out, and then stuffed with gauze. If pieces of placenta have been retained, or in case of ulcerating polypus, these are removed and the gauze is applied. In endometritis he also introduces the gauze, filled with the iodoform-tannin powder, or soaked in its glycerole. The gauze is very readily introduced into the uterus, even in the multiparous womb a strip 20 cm. in length can be easily inserted. In incision of the cervix the gauze is packed into the cervix and between the cut surfaces.

Tamponing or filling large wounds in abdomen or large abscess cavities with the iodoform gauze has replaced wound drainage in his hands. In vulvar and vaginal cancer where, from loss of tissues, the deeper parts cannot be approximated, the cavity is stuffed with gauze. In the two cases operated on the cavity closed rapidly, there was no fever, and recovery was complete. He cites one case of perityphlitis abscess, refers to several cases of ecchinococcus cysts, gives three cases of laparotomy for ovarian tumors, and two cases of extra-uterine pregnancy, in all of which the abscess cavities, or the extensive wound surfaces, were dusted with iodoform and then packed with iodoform gauze, folded in fan-shape, the ends being carried out at the lower angle of the external wound. After seven or eight days these strips were drawn out, and if necessary replaced by one or two fresh strips. No fever followed these operations, recovery was rapid, and the patients could be discharged cured in a very short time. He claims that all discharges from the abscess walls or the wounded surfaces are absorbed, disinfected and carried out into the external dressings by capillary drainage; that if any wound secretions remain behind these are aseptic and innocuous; also that a large part of his splendid results is due to filling up the cavities with the dry iodoform gauze, and that the removal of this dressing is easy, and can be accomplished through an opening in the abdominal wall.

THE USE OF SEDATIVES IN INSANITY.—In the *Practitioner*, September, 1886, p. 181, DR. SAVAGE contributes a most valuable paper on the use of sedatives in insanity. The old practice of restraint by means of chain, cord, or whip was most barbarous, and the practice of producing quiet by means of narcotics is most strongly condemned. The principle of controlling patients by means of drugs will continue to be used by general practitioners until the public overcome their prejudice against asylum treatment. In nearly every case the history is the same. Sleeplessness and depression are tried to be overcome by opiates, or it is attempted to subdue violence and restlessness by narcotics. Something must be done if the patient be treated at home, and it is on this account that the author enters upon the subject of drugs in insanity, giving his experiences when they may do good and when they are harmful. At the Bethlehem Hospital such drugs as the bromides, morphine, chloral, and opium are seldom if ever used. In studying the treatment of mental disorders by means of sedatives, it must be remembered that two very opposite conditions give rise to mental disturbances: In one the brain is the chief cause of the disorder, in many cases the evil being organic decay of this organ; in other cases the mental disorder is functional, and may be due to bodily disease react-

ing on the mental processes, or to perversion of the senses and allied disorders of intellectual processes. In cases of brain decay you must be careful not to begin with large doses; in functional disorders you must sometimes not be afraid to give large doses, for in functional disorders of the mind profound impressions produced by therapeutical or accidental circumstances may effect wonders. In these cases the old term "alterative" has some meaning. In some functional cases, a whitlow, or a toothache, a severe attack of diarrhœa, or sickness, may cause relief, and in the same way a blister or a seton, an emetic, or a powerful sedative may effect a similar result. The author does not believe in treating the symptoms of insanity as if they each had a definite meaning. Sleeplessness may as often be removed by a stimulant as by a narcotic. Bromide of potassium is supposed to be the strongest remedy we have for nervous excitement, and in some cases of restless excitement it is very useful, if given in doses of 20 grains three or four times a day; it is most useful in young cases belonging to nervous families, especially those who complain of vague uneasy feelings in the head. In cases of sexual perversion of one kind or another, bromide is very useful. In young men and women, with a tendency to commit suicide or be violent, a dose of from 20 to 40 grains at bedtime has good effect. Any tendency to epilepsy is often treated by bromides, but here frequently the number of fits are reduced at the expense of harm to the mind. Bromide is generally given in combination with chloral, and the author's experience is that they do no good. In the sleeplessness of the early stage of puerperal insanity it is well to try them, and they may tide over a dangerous time; but if rest be obtained at the expense of appetite for food, more harm than good is done. Dr. Savage lays down the law: if sufficient food be taken, bromide or bromide and chloral may be pushed in cases of mental excitement. Objection is taken to chloral because it soon disturbs digestion; but in cases of acute delirious mania, if given with abundance of food and stimulants, it will save many from death.—*London Medical Record*, Nov. 15, 1886.

Natural History of Tuberculosis and the Bacillus Theory.—Dr. R. B. Davy, of Cincinnati, has lately read two papers before the medical societies of that city, in which he thinks he has shown the infectious theory of tuberculosis to be supported in every respect by the natural history of the disease. He does not lay particular stress on the "bacillus tuberculosis," and speaks of the poison more as the "tubercular virus," but insists that, like all other organisms, it is a creature of heat and moisture. From the fact that its appearance and extension are only noticed to occur in confined spaces, and its disappearance most favored in unconfined spaces, he concludes that the danger of infection depends more upon quantity than quality of poison. After extensively discussing the natural history and climatic treatment of the disease, he comes to the following conclusions: 1. That tubercular phthisis occurs most frequently and most fatally in warm or hot regions characterized by a non-porous soil and the ordinary accompaniment of excessive humidity of atmosphere. 2. That it depends upon a specific organism, which can be made to produce the disease by inoculation. 3. That the key to the introduction and development of this organism in the system is ordinarily some form of irritation. 4. That the disease is plainly curable in all its forms except the acute, and even this may not always be fatal. 5. That to the predisposed it is communicable by infection through the medium of a polluted atmosphere. 6. That the infection depends upon quantity rather than quality of virus. 7. That on the open sea, where every condition favoring the development of tuberculosis is present except the tubercular spores, the disease speedily disappears. 8. That the nearest approach to perfect immunity from tuberculosis is to be found on high mountains where, on account of extreme rarefaction and accompanying dryness of the air, the tubercular organism cannot exist.

Diagnosis and Treatment of Tobacco Amblyopia.—Dr. Geo. H. Powers, of California, says: It has been my practice for several years to use inhalations of amyl nitrite in all amblyopia cases, and I have found it of great value, especially (if not exclusively) in the cases of tobacco amblyopia. I believe that it is of great assistance in differential diagnosis, for thus far it has proved that, in progressive atrophy from other causes, no benefit is derived from the exhibition of the amyl, while in tobacco amblyopia vision is immediately and markedly improved.

For instance, a patient presents himself with a history of rapidly failing vision, without pain or inflammation, and examination discovers a dirty grayish hue of the disk, with diminution of circulation, and $S.=\frac{20}{CC}$. Inhalation of a few drops of amyl, pushed only to the point of lively hyperæmia of the face and headache, will cause a decided increase in the circulation in disk and retina, and within five minutes $S.=\frac{20}{XL}$. This evidence that vision is not permanently lost is of great value in fortifying the patient for the abstinence which is necessary to his cure. The sudden improvement is, for the most part, temporary, as, after an hour or so, S. recedes to perhaps $\frac{20}{C}$, but it is not wholly lost, and daily inhalations, combined with tonics and abstinence from tobacco and alcohol, have in my hands proved much more rapidly curative than the strychnine and electrical methods. As the only action of the amyl seems to be to increase the blood supply, it would seem that tobacco amblyopia is due simply to a loss of function from anæmia, which may result in atrophy if long continued.—*Medical News*, Dec. 4, 1886.

Treatment of Chronic Constipation in Children.—Dr. W. B. Cheadle, at the close of a clinical lecture on this subject, points out the disastrous results of mistaken treatment, and shows the necessity of a more rational procedure. "Look at the evil effect of strong purgations—how they enervate

and wear out the tone of the bowel. No occasional purge of rhubarb or scammony is efficient to cure. Look, again, at the evil effect of frequent enemata. Enemata are only to be used on an emergency. They, equally with strong purges, impair tone and do direct harm by actual dilatation. In confirmed cases of constipated habit, treatment must be not intermittent, but continuous; the daily administration of appropriate remedies steadily, for a considerable period, is absolutely essential. Intermittent treatment is abortive, ineffectual, and aggravates the evil. What, then, is the proper treatment for these cases? First, be sure that there is no malformation, no intussusception, no sore about the anus, rendering defecation painful. Then use saline laxatives. Their mode of action is by increasing the flow of secretion rather than by stimulating peristalsis. Thus tone returns when distension is relieved by the easy evacuation of fluid stools. Further aids to this are strychnia, nux vomica, iron and belladonna. They act by increasing muscular tone and nutrition, not by stimulating peristalsis directly. In the case of little children up to two years old simple carbonate of magnesia in milk is sufficient (5 to 10 or 20 gr.); this is better than the piece of soap in the rectum, or the repeated castor oil or manna so constantly advised. In older children the sulphates of magnesia and soda, with the tonics named above, and daily massage with castor oil or cod-liver oil, are most useful. In older children still, a pill of aloes or euonymin, with sulphate of iron and nux vomica, may be given as an alternative to the salts and strychnia, but no frequent rhubarb, or scammony, or podophyllin or jalap (these are for the relief of temporary difficulty only); in mild cases, perhaps, or if the liver is not acting, a dose of calomel, grey powder, and soda, or senna. Regimen is an important element in the treatment if the child should have chronic constipation; abundant water, pure, not hard; "salutaris water" is excellent. In little children add a good infant's food to milk; fruits, fruit jellies, treacle, cooked green vegetables of the softer and more delicate kinds. Some variety in food is useful; a good mixture is better than a monotonous diet. It is, I think, extremely doubtful if coarse food is useful in the long run. It causes atony and weariness of muscle eventually by over-stimulation. And you must insist on regular evacuations. Take care that the stools are not dry and hard, or the child will resist action and increase constipation. Other useful adjuncts are—abundance of fresh air, which aids in improving nutrition; and exercise, which aids the passage of the contents of the intestine down the tube, and improves general health and muscular tone."—*Lancet*, Dec. 11, 1886.

SANTAL OIL IN BLENNORRHAGIA.—DR. LITZEL, of Munich, furnishes (*Allg. Med. Central Zeitung.*, Nos. 76 and 78, 1886) a somewhat detailed account of his experience of the use of santal oil and essence of copaiba, in the treatment of this troublesome affection. He at first gave this medicine with extract of coffee, but as at least half the patients showed extreme aversion to the drug, gelatine capsules were substituted, two or three capsules, each containing five minims of oleum santali, being taken three times a day. Of ninety-seven patients thus treated, four had gastro-intestinal disturbance; two of these had violent diarrhœa, and the other two severe dyspepsia. Eructations and burning sensations in the stomach were often noticed in the rest, but the drug was persisted with. It should not be given on an empty stomach. One bad symptom, which occurred in five cases out of the whole ninety-seven, consisted in severe congestive pains over the kidneys. Louis Jullien, in his recent work on *Venereal Diseases* (Paris, 1886), speaks of this symptom, also of urticaria, as being not infrequent. Sandal-wood oil is much better tolerated than balsam of copaiba, and if pain in the liver should arise, it suffices to discontinue the drug, and order a warm bath. The use of about thirty minims daily is generally enough to give the urine a distinct odor of the oil. The capsules used were Grimault's (Paris), and Paulcke's (Lepsig). Both these makers sell the pure oil in their capsules. The general indifference and distrust towards sandal-wood oil is apparently due to the fact that owing to its high price, it is extensively adulterated with copaiba balsam and castor oil, so that the commercial oil often contains only a small percentage of the genuine oil. Dr. Hager gives the following test of its purity: "Genuine E. I. sandal-wood oil (.0980 specific gravity) requires, to produce turbidity, from four to five volumes of dilute alcohol of specific gravity .0889, added to a clear mixture of one volume of the oil, and two volumes of absolute alcohol (.0799 specific gravity)." Dragendorf's test is simpler; namely, a solution of one part of bromine in twenty of chloroform. When from ten to fifteen drops of this test are mixed with one of the oil, the color becomes a brownish violet, and later on dark-blue. The pure oil is clear, light-yellow in color, and very pungent on the tongue; it has a slight odor of copaiba balsm. The results of treatment were these: 1. Given in an early stage, the secretion diminished rapidly, and the pain on micturition ceased. This result happened in thirty seven out of forty-two cases. 2. If, after ten or twelve days, the oil be discontinued, the old symptoms reappear. 3. The best results were obtained when the oil was commenced in the third or fourth week of the gonorrhœa, together with the use of weak astringent injections. 4. Cystitis. 4. Cystitis and gonorrhœal prostatitis were always greatly benefited by the oil. 5. Cases of gleet did best under local treatment.—*British Medical Journal*, Dec. 4, 1886.

SECONDARY INFECTION THROUGH TYPHOID ULCERS.—SENGER reports a case of a woman who died of typhoid fever, in which he found the following lesions: Vast ulcerations of the lower part of the ileum, colon and rectum; enlargement of the spleen and mesenteric ganglia; recent verrucous endocarditis limited to the mitral valve; tumefaction of the liver and kidneys; and pronounced pulmonary œdema. No bacilli could be found in the ulcerations, but the intestinal mucosa, the mesenteric ganglia, and the tissues near the endocarditis were infiltrated with streptococci.—*Gaz. Méd. de Paris*, No. 49, 1886.

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A COMPLETE ORGANIZATION OF THE MEDICAL PROFESSION, AND HOW TO ATTAIN IT.

"We want 80,000 doctors enrolled under one Constitution and By-laws believing that their common interests are faithfully looked after by the great central body. Perhaps such a hope is Utopian. But we are sanguine enough to believe that it can be wrought out, and must be if the American profession shall attain the power to which it is entitled."—*American Lancet*, p. 422, for November, 1886.

The above paragraph from an editorial in our valuable contemporary simply expresses the desire to have the entire number of members of the regular profession of medicine in the United States actually enrolled under one general organization, and a degree of confidence that it can be practically accomplished. The idea of such an enrollment or nominal membership of the whole profession under one Constitution and By-laws, to be governed by a comparatively small select Council or Senate, is not new, but was the fundamental idea or principle on which the British Medical Association was founded more than half a century since; the same that shaped the organization of the Massachusetts State Medical Society with its Branch or District Societies; and the same was actively discussed by the Committee appointed in 1846, to report a "Plan of Organization for the American Medical Association." We are satisfied that our *confrère* of the *American Lancet* and all others who will thoroughly study the history and practical results of Medical Society Organizations among all English-speaking people, will become convinced that such a complete enrollment under one organization can never be effected or perpetuated either in Great Britain or the United States of America, except by an Act of Parliament for the one, and an equally imperative law of Congress for the other, enforced by adequate penalties. The probability of the procurememt of such a National law susceptible of practical enforcement, in either country, is too remote to justify its further consideration at present. The development of such a complete organization or literal enrollment under one Constitution, by the voluntary act of the entire membership of the profession, if even attained, would require at least one or two centuries if we may judge by the progress made in the past.

Great Britain, from the comparatively limited extent of her territory and the density of her population, presented conditions much more favorable for the success of such a plan, than our own country. Notwithstanding, the British Medical Association organized with a limited and stable Council for the management of its business affairs, and rules favorable for the formation of Branches in all parts of the country, the members of which thereby become members of Association, has been in existence fifty-four years, and has enrolled as members to this date only about one-half of the members of the profession in England and Wales, Scotland and Ireland, who are legally authorized to practice medicine, surgery and midwifery. With our vast territory divided into between thirty and forty States with no uniform laws regulating either medical education or practice, and not even a general registration of the members of the profession in many of the States, the prospect of bringing them all into actual membership of one organization capable of wielding an united influence, is certainly very remote. While it may be justly deemed impracticable to bring the whole profession of our country into actual voluntary membership of one organization under one constitution, it certainly is not impracticable to so far complete the organization of the profession into municipal, country, district, State and National Associations, on the representative basis, as to give it all the unity and power, with far greater facility of expression, that has ever yet been attained by other methods. A complete organization of the profession on this basis would require the voluntary formation of the regularly educated members of the profession in each county of each State; each State Society should be composed essentially of delegates elected anually by the County Societies in accordance with a uniform ratio of representation; and the National Association should consist of delegates appointed by the State Societies, also in accordance with a uniform ratio of their membership, thus

combining the whole profession in one National representative body, based directly on the State Medical Societies, and indirectly through them, on the municipal and county societies of all the States, in strict accordance with the political institutions of our country, and in harmony with the prevailing habits of thought of our people.

The organization of the American Medical Association commenced in 1846 and completed in 1847, was based essentially on this principle of representation, though imperfectly applied on account of the limited number of county and State Societies then in existence and the diverse organization of such as did exist. But the adoption of the fundamental principle by which the responsible *voting membership* of the National Association was made to consist of direct delegates from local and State societies gave so much impetus to the work of organization of these, that for several years past regular organizations have existed, and have been sending delegates to the National Association in every State, in many of the counties, and all the larger cities of our country. A full investigation will show that during the forty years since the organization of the American Medical Association it has increased its direct constituency in the local, County, District, and State Medical Societies to an aggregate number three times greater than are enrolled as members of the Branches of the British Medical Association resulting from the fifty-four years' existence and work of that great and influential medical body. During the past history of the American Medical Association such improvements have been made from time to time, in the practical application of the principles of its organization, as experience has shown to be necessary, leaving, at present, but few further changes of importance desirable. But the most important work that needs attention, is that of organizing the profession in every county or district where no society yet exists, and the making of those already in existence more full and efficient. To the details of this part of the work and its importance we will give attention in another number of THE JOURNAL.

FERMENTATION, PUTREFACTION, AND SUPPURATION.

Notwithstanding the deluge of matter that has been published of late years in regard to bacteriology, DR. HERMANN KNAPP, in introducing a recent lecture on "Fermentation, Putrefaction and Suppuration" before the New York Academy of Medicine, expressed his conviction that the importance of the subject was not sufficiently appreciated in this country. He quoted a recent opinion of Professor Brieger, of Berlin, to the effect that the great majority of all diseases now seem to be of bacterial origin, and in support of the correctness of this proposition referred to the weekly mortality lists of the various American cities. Thus, during the week ending August 28, 1886, the number of deaths from infectious diseases in New York was set down at 33 per cent. of the total mortality; those from consumption at 16 per cent.; and those from croup and diphtheria at about 5 per cent. Here were nearly 55 per cent. of all deaths attributable to diseases of undoubtedly bacterial origin. In addition, 20 per cent. of the deaths were from diarrhœal diseases, and at least 90 per cent., if not all of them, may be regarded as cases of germ disease. This brings the percentage up to 75 per cent. But such affections as pneumonia, peritonitis, syphilis, gonorrhœa and skin diseases, are not included in the estimate; and if only 10 per cent. of these were classed as of this character, it would increase the present percentage to 85. This is exclusive of surgical diseases in which undue suppuration is caused by microbes; and estimating the mortality from these at 5 per cent., we have a grand total of 90 per cent. of all deaths to be attributed to disease of bacterial origin. It seems, then, that Professor Brieger is right.

Bacteriology has shown its principal fruit in the department of surgery, and there can be no sort of doubt that antisepsis has advanced this branch of medical science to its present high position. Antisepsis, however, is in reality nothing but the practical application of the three words, *fermentation*, *putrefaction*, *suppuration*. Fermentation may be described as the decomposition of carbohydrates through the agency of the yeast-plant; and we may compare the action of the latter to that of the bacteria which are believed to cause putrefaction and suppuration. There are two grades of putrefaction (which is brought about by different kinds of microbes, fifteen or twenty varieties of which have now been discovered); the first grade is met with when there is but little oxygen present; the products being water, carbonic acid and ammonia, and the process of decomposition is attended with little or no offensive odor. The second grade, or putrefaction proper, as generally understood, is seen when there is a larger quantity of oxygen present. Dr. Knapp then discusses the question, whether suppuration and putrefaction are one and the same thing. Surgeons, he said, use the two terms indifferently, and after speaking of the experiments of Recklinghausen and others with the cornea of the frog, he refers to the common assertion

of surgeons that if all germs be excluded, suppuration could not take place. Personally he has investigated three special points in this connection, viz.: 1. Does mere traumatism produce suppuration? 2. Do foreign bodies alone produce suppuration? 3. Do chemical agents of themselves produce suppuration?

In regard to the first inquiry, both in Berlin and at home he has made a number of experiments on the eyes of rabbits. If a wound be made by a perfectly clean instrument, he has found that it will heal by first intention, with no suppuration whatever; but if the wound be made with a contaminated instrument, suppuration invariably results. One of the axioms in antiseptic surgery is that simple fractures never suppurate. It is true that there are rare exceptions to this; but when suppuration does occur, it is always in cases in which some other process of suppuration is present in the body. Whenever the individual is healthy, therefore, no suppuration will take place. In support of this statement may be mentioned the experiments of Becker, who, having made fractures in animals, injected pyogenic fungi into the ear; with the result of at once producing suppuration, although the exciting injury was only a simple fracture. Where no such injections were made the process of repair was never attended with suppuration. Other similar experiments show how ulcerative endocarditis and other suppurative processes can be produced by the introduction into the system of pyogenic organisms.

In regard to the second inquiry, Are foreign bodies by themselves capable of producing suppuration? Dr. Knapp concludes that if they are introduced antiseptically, they will not produce suppuration, and that they may remain indefinitely without giving rise to it. In support of this, he showed a rabbit into one of whose corneæ he had introduced, by means of sterilized instruments, a piece of rusty hair-pin, after having first brought the latter to a glow, in order to destroy any organic matter that might be adherent to it. No suppuration whatever had occurred, although the foreign body had been in the eye for a very considerable time. Into the cornea of the other eye of the same rabbit he had introduced a piece of the same rusty hair-pin which had been dipped in fluid containing pyogenic fungi; and within twenty-four hours a violent phlegmon was set up, which soon completely destroyed the eye. Still, the truth of the proposition that foreign bodies alone will not cause suppuration is not generally admitted, and Pasteur, in 1878, stated that even if foreign bodies be introduced antiseptically, they are capable of producing suppuration. Whether he still adheres to the same view or not, we do not know.

Do chemical agents by themselves produce suppuration? is almost invariably answered in the affirmative. Especially in the case of croton oil is it claimed that suppuration is caused without the intervention of germs. If this exception can stand, however, the whole theory of suppuration, according to the views here taken, must fall to the ground. It is a very difficult question to satisfactorily test in a practical manner; but the solution of the problem has been undertaken by four observers under very strict precautions. The results of these experiments go to show that chemical agents do not of themselves produce suppuration. In repeating some of them Dr. Knapp had much difficulty as regards croton oil, on account of the extreme irritation caused by it. Oil of turpentine, however, is much more manageable. He followed the method of J. Straus in these experiments. On account of the practical impossibility of otherwise completely disinfecting the fur of the animal, he sterilized the skin of a rabbit by means of the actual cautery. Then, having made the injection of the chemical agent under the skin by means of sterilized apparatus, the opening made by the needle was sealed up again by the actual cautery. Some of the experiments were made with a pipette, the opening in the skin through which its point was inserted having been made with a heated knife. With the experiments made with oil of turpentine and croton oil (although there were but five in which the latter was used), suppuration resulted in only 10 per cent of the cases. As a rule, there was coagulation of fibrin, with some necrosis, but no suppuration. In the cases in which suppuration did occur, it was found that there were always germs present, on account of some imperfection in the technique of the experiment. Roice, of Utrecht, has made the same experiments in connection with the anterior chamber of the eye; and this method of procedure has the great advantage of allowing the whole process set up by the chemical agent to be under observation. Dr. Knapp has repeated Roice's experiments, and he also in one instance introduced the chemical agent into the abdominal cavity. No appreciable effect was produced upon the animal, and when, two weeks afterward, it was killed, no pathological changes whatever could be observed at the autopsy.

In Dr. Knapp's experiments upon the eye, inflammation was caused, but no suppuration, even with croton oil; which he finds can be used more satisfactorily when mixed with olive oil, in the proportion of

one to two. In some of the animals operated on the injection was made through the sclerotic. When the same chemical agent (either croton oil or turpentine) was introduced into the other eye in connection with pyogenic fungi, the most violent suppurative inflammation was always produced. He has also made a large number of cultures from the two classes of eyes. From the eyes containing pus, an increased quantity of microbes, with pus, resulted. But microbes (although no pus) were also obtained from the eyes from which pyogenic fungi were excluded; and this is a point that calls for an explanation. The microbes were found not only in the eyes, but also in the kidneys and the blood, though not in the brain. It is evident, therefore, that the system had become infected through the suppurating eye; and the microbes found in the other eye no doubt originated from this source. He therefore made the two classes of experiments in two different series of animals, instead of operating on both the eyes of the same rabbit. When the cultures were now made, no microbes were found to have come from the non-suppurating eyes. These experiments seem to be satisfactory and conclusive. In the eyes into which pyogenic germs were introduced in connection with the chemical agent, suppuration occurred and microbes were found in large numbers; but in the eyes from which such germs were excluded there were neither suppuration nor microbes. The results observed in the latter were merely coagulated fibrin and fibrino-leucocytic exudation. He thinks, therefore, that so far as this whole series of experiments go, we are justified in formulating the proposition that *suppuration is always produced by microbes;* and hence there can be no suppuration without the intervention of these morbific agents.

What, then, is suppuration? First, as in the case of fermentation, the microbe ought to enter into its definition. Fermentation, as has been seen, is the splitting up of a hydro-carbon into simpler forms through the agency of the yeast-plant. Putrefaction, again, is the similar decomposition of a nitrogenous substance through the agency of microbes. Finally, suppuration is likewise the splitting up of a nitrogenous substance, by the same kind of agents. The difference between the two is that in putrefaction, the process is always concerned with dead matter, while suppuration always takes place in living matter.

CENTENNIAL CELEBRATION OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.—Full preparations have been made for an interesting and elegant celebration of the Centennial Anniversary of this well-known Society, January 3d and 4th, in Philadelphia.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, Monday, December 6, 1886.

THE PRESIDENT, EDMUND J. DOERING, M.D., IN THE CHAIR.

DR. JOHN A. ROBISON read a paper on the

ANTIPYRETIC ACTIONS OF ANTIPYRIN AND THALLIN,

in which he had collected and condensed the results of the experiments of a large number of clinicians. The largest number of observers agree that antipyrin is a safe, efficient and unobjectionable antipyretic. Contrary to belief in general it does not have a depressing or debilitating effect on the heart, whereas thallin has. Antipyrin causes no change in the blood, whereas thallin has a deleterious effect on the blood and veins. In conclusion, the author believed antipyrin should always be given to produce a pyrexia in cases where the temperature is excessively high. He does not believe the drug has any influence to lessen or prolong the duration of the continued fevers. He also stated that it not only lowers the temperature, but relieves the pain that accompanies acute articular rheumatism with endocarditis, especially if given with alkalies.

DR. J. J. M. ANGEAR said: I have not given this subject any special study, but the subject of temperature I have, and it may not be amiss to speak of some difficulties which we have to contend against. If radiation is increased or diminished and metabolism remains normal, we have increased or decreased temperature; or if metabolism of the body be increased or diminished and radiation remains normal, then we have increased or decreased temperature. We have no means of arriving at any definite conclusion whether our patient, with increased temperature, is suffering with increased metabolism or decreased radiation, or both. We know from observation and from various experiments that the internal part of the body is very frequently hotter than normal during the cold stage of fever, and cooler than normal during the febrile stage. May not the sum total of caloric in the body be diminished when the thermometer tells us that it is increased, and *vice versa?* If we answer yes, then we are found trying to diminish the temperature, when we should be husbanding what we have. Does not this show that there is a certain amount of pathological knowledge in regard to body temperature which we have not yet arrived at? And our therapeutical knowledge is necessarily as defective in this regard.

Do antipyretics facilitate radiation or check metabolism, or both, or do we know anything about it except its action upon the thermometer? If we could arrive at some definite, pathological conclusion as regards the pyrexial state of the patient, then we could, perhaps, arrive at some scientific knowledge of the action and use of all antipyretics. Had we an instrument by which to measure the amount of radiation and metabolism, it would be of far greater value to us than the thermometer.

Dr. C. C. Paoli said: The paper was well prepared and interesting, but the question arises, do we know anything about the essential nature of fevers? I answer, no. But we know the effect, if we do not know the nature, and in fevers we generally use remedies to lessen the temperature. I have used antipyrin in only eight cases, two of typhoid fever, two of scarlatina, two of lung trouble. In regard to the fever, I admit that the remedy had an antipyretic effect. In two cases the patients vomited as an effect of taking this remedy. I commenced with ten grains, and it diminished the temperature but did not stop the course of the fever, which lasts usually from five to six weeks. One effect I have found from the use of antipyrin, is the lessening of nervous irritability. In a case of tuberculosis, after using antipyrin I began with quinine and found it more of a tonic. In the cases of scarlatina in which I used antipyrin I did not observe any favorable effect; it lessened the temperature, of course, but the same effect was produced by quinine.

Dr. H. Gradle said: Although my line of practice does not often enable me to watch the effects of antipyretic drugs in disease, I can speak of the effect of antipyrin in one disease, viz., the dentition fever of infants; which, although not usually serious, is in a great many instances annoying, and in which, when the fever is high, there is a possible danger of convulsions. I have never heard of any drug that will reduce the fever under these circumstances as promptly and with as little disturbance as antipyrin. With a temperature of 103° a child can be rendered quiet in the course of an hour by one dose of four grains, and perhaps a second dose of two grains, and be pacified for the entire night. I wish to ask the author if he has had any experience in the continued use of thallin in typhoid fever, with the effect of aborting the disease? According to some rather startling statements made several months ago by Ehrlich, it was claimed that it reduced the fever permanently in the course of eight to twelve days.

Dr. G. W. Webster favored the use of antipyrin. He had used it in cases of typhoid pneumonia. One point is the favorable action of antipyrin on the headaches of typhoid fever. One of the most distressing symptoms when the temperature is very high is the severe, continued headache and the delirium which always accompanies it. He had not found any other remedy that would have as good an effect in these cases as antipyrin, which always relieved the headache promptly.

Dr. H. T. Patrick said: I am quite partial to antipyrin and have used it in a number of cases. It will often effectually reduce the temperature when baths and sponging will not. In a case of pneumonia in a child of eight years I gave antipyrin from the beginning to the end, with good results, except for one day when I tried sponging instead. The child was sponged off six times in six hours, five to ten minutes each time, without any reduction in temperature. Sometimes cold baths have no effect in reducing the temperature because of a very thick panniculus of adipose tissue. Here antipyrin is indicated. The continuous administration of antipyrin in tuberculosis I have found in a few cases very gratifying. In one case ten to fifteen grains were given every afternoon for a term of ten weeks, with great relief to the patient. His temperature was 103°, and there was prostration and irritability of mind. The antipyrin was a relief to the patient, and to his family on account of the improvement in his disposition.

Dr. J. Frank had had a personal experience with antipyrin, having taken it two years before while suffering with typhoid fever. The temperature ran as high as 106°, and quinine had no effect in reducing it. He took antipyrin in 15 and 30 grain doses, first by mouth and then by rectum, with the effect of rapidly reducing the temperature. He has used it in practice in the treatment of erysipelas and typhoid fever, but does not depend upon it entirely, giving it when the temperature rises very high. In erysipelas he has always found that antipyrin will reduce the temperature.

Dr. C. W. Leigh said: I have seen antipyrin used in a limited number of cases, three or four, of typhoid fever, and none of the patients were older than twenty-one. In these cases there was a visible decrease in temperature and the delirium was lessened very much.

Dr. J. A. Robison said that he had not pretended to give anything except the results of the observations of a large number of physicians who had used this drug and recorded their experiences. Also the results of quite a number of experiments of therapeutists, as for instance Umbach's experiments in regard to the decrease of tissue waste. I did not try to detail all these different experiments, but attempted to epitomize the well known actions that have been observed of the drugs. Two of these actions, the increase of heat radiation by the dilatation of small blood vessels, and the decrease of oxidation, are the main factors in producing the fall of temperature. Dr. Angear says if we can arrive at some conclusion in regard to the manner in which the drug acts, we can use it. I think we have arrived at a conclusion; these experiments have been carefully conducted and we have seen that antipyrin actually reduces high temperature without any danger to the patient, and it is only in cases where the high temperature itself is a danger to the patient that its use in large doses is to be recommended. In regard to its use in aborting typhoid fever, I have not tried it except in four cases; one was a boy under seventeen and another one fourteen. The temperature was about 103°. I gave large doses and in three days all signs of fever had disappeared. A few days afterwards another member of the same family was taken sick, and the antipyrin was used as before, but that patient went through all the stages of typhoid fever. In another family there were five cases of typhoid fever. Two of the family had had the fever, one of them dying; then three others took sick. Antipyrin was given in large doses in all these cases, but it failed to abort the fever in any of them.

Dr. Henry Gradle read a paper entitled

DISEASES OF THE VAULT OF THE PHARYNX.

He emphasized the fact that this region is too

much neglected by general practitioners in spite of the importance and curability of some of the diseases occurring there. According to his experience the best examination can be made by means of a large mirror and a palate hook, and this is facilitated by using cocaine when necessary. He gave the history and symptoms of enlargement of the pharyngeal tonsil, which trouble is often called adenoid vegetations, but as usually seem in this country there are no coxcomb-shaped vegetations, it amounts rather to a uniform enlargement of the tonsil at the roof of the pharynx. The condition is of especial importance on account of the liability of ear disease to which it gives rise. Often reflex symptoms are observed like asthma, cough, bronchitis and headache. The tonsil should in every case be removed when enlarged. This can be done by means of the galvano cautery, but it generally requires many sittings and the process is tedious. The quickest way is by means of scoops or sharp curettes according to the plan of Trautman. The hæmorrhage is never alarming and the pain not very great. The result of the operation is always very gratifying to the patient. The pharyngeal tonsil may require treatment even when there is not much enlargement. Sometimes irritation is produced by the presence of white plugs consisting of bacterial masses in the crypts of this gland, which condition can be removed by the galvano cautery. In other instances the glandular tissue forms reddened, tender spots at the junction of the lateral walls and the roof of the pharynx above the Eustachian orifices. This condition may keep up inflammatory ear trouble until removed by the galvano cautery. The speaker further contrasted the relative curability of hypertrophic chronic catarrh of the nasal pharynx with the almost hopeless condition of that form of catarrh, in which no lesions are found on careful inspection. In the hypertrophic form of disease he has found nitrate of silver most serviceable. The form of catarrh in which no lesions of any account are found, has been attributed by Tornwaldt to catarrh localized in a small recess of the mucous membrane in, or just back of the pharyngeal tonsil, known as the bursa pharyngea. The speaker has not been able to verify the existence of this bursa, and considers the pit which is sometimes seen with the rhinoscopic mirror in this region, as a part of the pharyngeal tonsil. He has followed Tornwaldt's directions to cauterize this spot in obstinate cases of catarrh with some little success, but without believing that there is any catarrh limited to this recess. He has seen a few cysts in this locality, but considers them as being formed in the substance of the pharyngeal tonsil and not due to the closure of the alleged bursa pharyngea.

DR. W. E. CASSELBERRY said: I agree with the author on the importance of the pathological states which occur in the naso-pharynx, and I would particularly emphasize the importance of the subject in connection with ear diseases. It is usually neglected because the practitioner does not use the rhinoscope. This can readily be used since the introduction of cocaine; formerly, the pharynx being so irritable, it was a different matter, and considerable practice was necessary in order to acquire the use of the mirror, but now a 2 per cent solution of cocaine sprayed around the pharynx will so reduce the sensibility that the introduction of the rhinoscopic mirror is comparatively easy. I was somewhat surprised at the size of the mirror recommended; usually a small one about one-half inch in diameter is used. This, of course, will not show the entire nasal-pharynx at one time, but it can be easily rotated from side to side. With a large mirror a hook is always necessary, which usually complicates the case and is more apt to gag the patient than the use of a small mirror without the hook. I am accustomed, in considering the diseases of the nasal pharynx, to divide the inflammatory affections into three classes. First, the simple chronic naso-pharyngitis; second, the hypertrophic naso-pharyngitis, and third, the atrophic naso-pharyngitis. In the first there is a simple inflammation of the mucous membrane and of the connective tissue beneath the membrane, the connective tissue being sometimes involved to such an extent as to form, here and there, thickened areas of infiltration. I think that many of the cases in which the author sees no perceptible lesion in the naso-pharynx can be graded in this class. The hypertrophic form of disease may be sub divided into two classes, one in which the follicular structures are uniformly hypertrophied, the group of follicles constituting the tonsil of Luschka being enlarged and appearing in the rhinoscopic mirror of about the size and configuration of an ordinary tonsil of the throat. And the other sub-class in which the enlargements are pendant, pear-shaped bodies resembling stalactites and hence called the stalactitic form. This is the form which was originally described under the name of adenoid vegetations, and the one which is met with most commonly in Germany, whilst the uniform enlargement is more common in this country. The atrophic naso-pharyngitis, as is the case in the pharynx itself, may be regarded as a later stage of the hypertrophic naso-pharyngitis, although in rare instances it may commence in the atrophic form. During the hypertrophic stage the proliferated connective tissue cells gradually encroach upon the glandular structures, and, so to speak, squeeze them to death, whilst the connective tissue cells themselves, as in cirrhosis of other organs, of the liver, for instance, later contract and atrophy. The mucous membrane is now pallid and thin, and is encrusted over with a dry secretion. This is the form of disease which so often gives rise to fetor of the breath, especially when it involves the naso-pharynx, although the disease is not restricted to that locality. In reference to the treatment there is little to add to what has already been said. I have not employed the curette much as my patients will not tolerate the blood and pain. The pain now is not as great as before the introduction of cocaine, but the blood horrifies the younger patients, and the parents. I have found an equally efficient, although a more lengthy treatment, in the galvano-cautery. It is bloodless and painless. In cases of stalactitic growths the best method is the galvano-cautery snare. For the uniformly enlarged variety I employ a Hemming naso-pharyngeal elec-

trode. Nitrate of silver as a means in the treatment of catarrhal conditions, although it has been greatly abused, is unquestionably effective if properly used. In cases of simple chronic inflammation of the mucous membrane, where there is thickening of the subcutaneous tissue, a strong solution applied by means of the cotton swab, 40 grains to the ounce, used by the physician every day, then every two days and finally twice weekly, will lead to the absorption of the infiltrated material. Strong solutions of nitrate of silver (40 gr. to ℥i) cause absorption of infiltration whilst weak solutions (10 gr. to ℥i) stimulate the further production of infiltrated material and the activity of the glands. Consequently weak solutions will only aggravate the hypertrophic form of disease. For the same reason a week solution will benefit the atrophic form. In reference to the pharyngeal bursa, I am of the opinion that too great importance has been ascribed to it.

Dr. F. O. Stockton said: My experience in the treatment of chronic nasal pharyngitis by the use of nitrate of silver has been anything but pleasing, and I have never seen a beneficial result from it. It is recommended by many in the form of powder, 1 grain of nitrate of silver powdered with some drug and distributed over the membrane, but my experience has been negative. Solutions I have found to be of no benefit whatever. It discolors everything, is a dirty, useless drug, and greatly overestimated. The use of the curette in removing adenoid vegetations is quite a recent thing. The method that the author speaks of I have not tried to any great extent, and I prefer the gouge forceps; I generally use the galvano-cautery, as it is now possible to use it without difficulty with the aid of cocaine, and there being no blood lost is a very important consideration in the treatment of young subjects, because, even if they have no pain, if they see a drop of blood they think they are being killed and begin to scream.

Dr. M. R. Brown said: In regard to the mirror, the size recommended by the author I think rather large, and apt to produce gagging by coming in contact with the pharyngeal walls, but if cocaine is used this may be avoided, and should a mirror about half the diameter of the one shown be employed in posterior rhinoscopy, nine out of ten instead of three out of four cases can be examined at the first visit.

Referring to the pharyngeal tonsil producing bronchitis and cough, the irritating mucus finding its way into the larynx has a great deal to do with producing laryngitis, which will give rise to cough; and the case of bronchitis mentioned by Dr. Gradle was evidently of a reflex nature. After having treated the pharynx with nitrate of silver for any length of time there results a thickening of its mucous membrane; there is absolutely nothing to be gained from the use of this remedy in the conditions mentioned; at least, such has been my experience after having employed it in various strength solutions in the different diseases of the pharynx. I occasionally make use of the cold wire snare, but prefer the galvano-cautery. The gouge or curette I also employ with satisfactory results; but, owing to the pain it causes the patient, have devised a punch forceps, the use of which is attended with less pain than, and is as satisfactory as the gouge.

Of the hypertrophied tonsil receding between the ages of 25 and 30 years, I have seen a number of cases in which the patients with this growth were beyond this age; to-day examined a man 35 years of age, and a short time since removed a similar growth from a male who was over 50 years old.

Speaking of the microscopic appearance of the naso-pharyngeal growths, Mackenzie says that in adenoid vegetations "the glandular element is, as a rule, more marked in growths taken from the vault of the pharynx, whilst in vegetations taken from the lateral walls the stroma of Kis is found in greater abundance."

Dr. H. Gradle said: As to the size of the mirror, of course where the patient will not permit you to use a large one you will have to use a small one, but where you can use the large mirror, there is an advantage in gaining a full view of everything. In speaking of being able to examine three out of four I referred to patients as they come. As a rule, I do not use cocaine in the first examination, because it is so disagreeable. I do not use the hook where the distance between the posterior wall and the pharynx is considerable. As regards nitrate of silver, there are many conditions in which it is entirely useless. One is the practice of cauterization with the solid stick. I have never done this. But there are certain conditions where nitrate of silver is useful and acts promptly, viz.: chronic hypertrophic catarrh. And it is sure to give relief in the more acute forms of catarrh where the pharyngeal tonsil is not enlarged enough to cause damage, but swells from temporary congestion. The patient can use a preparation of 4 per cent. and apply it himself with a brush, but it is preferable to have the physician use it. The spray, according to my experience, is more effective and not so disagreeable as a dry powder, but it requires considerable care on the part of the physician to avoid staining the clothing.

Dr. F. E. Waxham reported a case of

PSEUDO-MEMBRANOUS LARYNGITIS, TREATED BY ELECTROLYSIS.

(See page 9.)

Dr. W. E. Casselberry said: The report is an extremely interesting one, and I suggest that the experiments be carried further, to ascertain if the galvanic current has any effect in softening the false membrane outside of the body.

Dr. Franklin H. Martin said: I have used electrolysis for about three years in the treatment of strictures of the urethra, stenosis of the uterine canal, chronic inflammatory exudations surrounding the uterus, and in fibroid tumors. In listening to this interesting report the question occurred to me whether the effect of loosening the croupous membrane could be attributed to the electrolytic effect of the current of electricity, or merely to the mechanical effect of the electrode. Electrolysis describes the terms upon which it acts; in the case reported we get no evidence of this action. I should be in

clined to attribute any beneficial effect that might have occurred to a counter-irritant effect of the positive sponge electrode that was situated externally. In regard to the power of electricity to dissolve substances similar to the exudate found here, I should judge from my experience that it possesses that power. I have been told that a current of electricity passed through a culture of bacteria had the effect of destroying the life of the germ. May this not explain an action that might be worth considering in similar troubles to the one under consideration?

DR. J. FRANK suggested that that if the author had used a weaker current he would have had a better result. In stricture of the urethra five cells of the McIntosh battery, with the fluid reduced one-half with water, are used. Twelve cells could hardly be borne on the skin. It would dissolve the membrane and produce inflammation.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, November 19, 1886.

THE PRESIDENT, CHARLES WARRINGTON EARLE, M.D., IN THE CHAIR.

DR. W. W. JAGGARD read a paper entitled

A CASE OF CHRONIC INVERSION OF THE UTERUS, OF TWENTY-ONE MONTHS' STANDING, REDUCED BY COLPEURYSIS.

History.—E. S., 36 years old, German; married at the age of 22 years; seven children, no miscarriages. Her first six confinements were normal. She was in the habit, common among German peasant women, of rising upon the third day and making up her own bed. In each of her labors she was attended by a midwife. Her seventh confinement occurred in October, 1884. According to the statement of the patient and the attendant midwife, the delivery of the child was normal. The placenta was removed, as in the six former labors, by traction on the cord. During the labor and the *puerperium*, no unusual loss of blood was observed, and the patient does not remember any extraordinary sensations of pain or faintness. The midwife consulted a physician on the second day of the lying-in period, with reference to the sudden development of high bodily temperature. On the same day, a well known obstetrician saw the case. He made the diagnosis of puerperal fever, instituted the usual plan of treatment, but declined further connection with the case, as he feared the infection of his regular puerperal patients, of whom he had a large number. No examination of the uterus, either by abdominal palpation or vaginal exploration, was made. On the third day an equally competent practitioner inspected the patient, confirmed the diagnosis of puerperal fever, and gave directions with reference to treatment. The contour of the uterus was not investigated either through the abdominal parietes or by the vagina. He continued to visit the patient for eight days, when he pronounced her convalescent. At the expiration of three weeks the woman rose from her bed for the first time, when she observed a fleshy tumor protruding from the vulva. Seven weeks after delivery she resumed her work as a washerwoman. She suckled her child fourteen months. During this period, painful coitus and the sensation of the presence of a foreign body within the vagina were the only symptoms which attracted her attention to her condition. She noticed no fluor, no hæmorrhage, and felt no pain except during coitus. The sexual act was not attended by any perceptible loss of blood. On account of the two symptoms mentioned she sought medical advice. The fleshy mass, situated entirely within the vagina, was supported by a large sponge.

The child was weaned in December, 1885. About March 17, 1886, she experienced severe metrostaxis, entirely without pain, and lasting six days. She supposed menstruation had been reëstablished and gave the subject no further thought. About April 15 another severe hæmorrhage occurred, painless and lasting one week. On May 28 she came under the writer's observation, and was admitted into the wards of Mercy Hospital. She sought relief, as she very distinctly expressed it, on account of painful coitus, the sensation of the presence of a foreign body within the vagina, and the excessive loss of blood during her last two menstrual periods. The woman was of medium size and height, with well developed muscles and clavicles like a man's. She presented evidence of marked anæmia.

Diagnosis.—Bimanual palpation revealed a pyriform tumor, the size of a hen's egg, protruding through the *os uteri*. The base of the tumor rested upon the pelvic floor, and upon coughing or straining appeared at the genital fissure. A shallow sulcus between the pedicle of the tumor and the walls of the cervical canal, extending around the left semicircumference of the canal, could be felt by the finger and traced with the sound. On the right side, no sulcus could be detected, and the membrane covering the tumor was reflected directly upon the external os. The long axis of the tumor was deflected to the left of the median line. The *corpus uteri* was absent from the normal position. The tumor, insensitive to pressure, was covered by a soft, villous membrane, and possessed the consistence of an œdematous myoma. The enveloping membrane was of a bluish-red color, presenting some spots of superficial ulceration, and bled upon the slightest touch. Tubal ostia were nowhere visible. Traction of the tumor downwards caused the sulcus on the left side to disappear entirely. An important diagnostic sign of inversion of the uterus, to which Carl Braun, Robert Barnes and Schroeder in particular have called attention. Reamy, of Cincinnati, has recently described a sign which might have furnished corroborative evidence at this stage of the diagnosis in the case under consideration. Reamy says that when the tumor, grasped by the fingers within the vagina, can be easily rotated on its vertical axis, it is probably a polyp, since such rotation could not occur to any marked extent in an inverted uterus, stiffened as it is by its muscular walls and the thick, strong, fibrous guy ropes furnished by the broad ligaments.

To make the differential diagnosis between inversion of the uterus and a pedunculated fibroid, positive, the patient was etherized. A sound in the bladder and a finger in the rectum were easily approximated above the tumor. The funnel-shaped cavity at the seat of inversion was easily recognized by the finger in the rectum, and by the hand on the abdomen in bimanual palpation.

No appearances were present that would indicate the invasion of the uterine walls by any new formation.

Treatment.—The patient was etherized, the contents of the rectum and bladder were evacuated, and the genitalia disinfected. The right hand was passed into the vagina, "and with the fingers and thumb encircling the portion of the body close to the seat of the inversion, the fundus was allowed to rest in the palm of the hand. This portion of the body was firmly grasped and pushed upward, and the fingers were then immediately separated to their utmost; at the same time the other hand was employed over the abdomen in the attempt to roll out the parts forming the ring, by sliding the abdominal parietes over its edge." At the expiration of forty-five minutes, the writer's hand was almost powerless, and Dr. E. C. Dudley kindly relieved him. Dr. Dudley gave up the attempt at reduction after thirty minutes' trial, fearing perforation of the fundus. Apparently not the slightest progress in the inversion of the organ had been made. Some hæmorrhage occurred as the result of manipulation, although the fundus had been enveloped with absorbent cotton and gauze. The manœuvre was repeated on the following day, under the same conditions, through the same period of time, with no more favorable result.

Emmet's method was then abandoned for the following reasons: The separation of the fingers to their utmost had no effect whatever in the dilatation of the *os externum*. As pointed out by Fenger, and as brief reflection will convince the most casual observer, mere extension of the fingers can have but little effect in the dilatation of the cervix, owing to the relatively feeble character of the extensor muscles of the forearm. The necessary manipulation of the congested *mucosa*, even when protected by cotton or gauze, caused a loss of blood of moment in an already anæmic woman. The uterine musculature had evidently undergone fatty degeneration, and there was serious danger of perforation. Finally, there was reason to entertain fear as to the patient's power to endure the shock from taxis, and the effect of prolonged anæsthesia.

Compression of the body of the uterus opposite to each tubal ostium, between the thumb and forefinger, so as to produce indentation of one side or the other—the Kiwisch-Noeggerath method—was equally ineffectual.

On Sunday, May 30, at the suggestion of Dr. W. H. Byford and Dr. Christian Fenger, the writer began an attempt to effect reinversion by colpeurysis. After the evacuation of the contents of the bladder and rectum, and disinfection of the genital canal. the colpeurynter was introduced while empty, so that it lay on the posterior wall of the vagina, and the *fundus uteri* was adjusted so that the long axis of the uterus and the axis of the pelvic inlet were coincident. The bag was then injected with water until it was fully distended. The patient was placed in bed in the dorsal decubitus. The instrument was removed at the expiration of twenty-four hours, and the genital canal disinfected. A bacillus containing 30 grains of iodoform was placed in the vaginal culde-sac, and the colpeurynter, after being cleansed, was reintroduced. Colpeurysis was continued in the manner indicated without interruption until June 9. Very gradually the sulcus between the pedicle of the tumor and the neck of the uterus deepened, until on the eleventh day the organ was so far reinverted that the fundus was on the same plane with the *os externum*. During this period gentle efforts at taxis were made daily, but without any apparent effect. No perceptible progress was made during the succeeding eight days. June 17, a serous fluid tinged with blood began to escape from the vagina, and it was thought the patient was about to menstruate. The colpeurynter was accordingly withdrawn.

During the nights of June 18 and 21 the patient suffered severe uterine hæmorrhages which threatened to prove immediately fatal. Hot vinegar was used as a vaginal douche, but did not prove so efficient a styptic as a hot saturated solution of alum. Menstruation ceased on June 23. On account of the hæmorrhages, it was deemed inexpedient to expose the patient to the fatigue consequent upon any attempt to observe the *mucosa* during menstruation. During the subsequent nine days the writer was indisposed, so that the treatment by colpeurysis was resumed on July 2. On examination, before replacing the bag, the inversion was found to be as complete and as irreducible as the day on which the treatment began. The uterus was gradually inverted, as before, until on July 8 the fundus was on the same plane with the *os externum*. From the 8th until the 10th of July no apparent progress was made in reduction. On the evening of July 16 the writer was very much pleased to find the uterus completely reinverted, and the vaginal portion of the cervix occupying its normal position. The sound passed into the uterus to the extent of 3½ inches. The *corpus uteri* was felt on bimanual palpation, in a position of slight retroversion, below the promontory of the sacrum. The patient was not aware of any change in her condition. She said, however, that she had felt a sudden, sharp pain in the hypogastric region some four hours previous to the examination. Owing to the patient's enfeebled condition—due in the main part to anæmia—she was not permitted to leave her bed until July 18.

The colpeurynter was in the vagina altogether thirty-three days. On three occasions during this period the bodily temperature rose to 102° F., but invariably fell to the normal after irrigation of the vagina and disinfection of the rubber bag. The presence of the colpeurynter in the vagina did not interfere at all with the functions of urination and defecation. The writer desired to express in words his appreciation of the constant attention devoted to the somewhat tedious plan of treatment, by Dr. Louis E. Lawson, late Resident Physician, Mercy Hospital.

Dr. Alex. J. Stone, of St. Paul, kindly repaired the bilateral laceration of the cervix, on July 20. The operation was unusually difficult on account of the extent of the tear, and the shortness of the vaginal portion. Dr. Stone's method of operative procedure differs materially from Emmet's, but its description is obviously out of place in the present report. The sutures were removed on August 4, perfect union having been secured.

The patient, after leaving the hospital, gained rapidly in strength. Menstruation occurred September 26; the process was painless, lasted four days, and the quantity of blood lost was normal. At the time of writing she had resumed her former occupation.

Remarks.—The case is of particular interest with reference to 1, anatomy; 2, symptoms, and 3, treatment.

1. Anatomy.—The uterus was in a state intermediate between the second and third degree of inversion. In the second degree of inversion—the incomplete inversion of Puzos, Levret, Leroux, Donnce, the third degree, or perversion of Crosse—the anatomical limit of inversion has been indicated by Baudelocque as the vaginal insertion around the *cervix uteri*. Under these conditions, according to Veit and Freund, the cervical canal is intact, the uterus is only inverted as far as the internal os, and the uterine globe remains within the vagina. In the third degree, the complete inversion of Puzos, Levret, Leroux, the utero vaginal inversion of Donnce, the *corpus uteri* and *cervix uteri* are completely inverted, and the anatomical limit as indicated by Levret, is the vaginal insertion at the vulvar orifice. Under these conditions, the inverted uterus is also prolapsed and protrudes beyond the place of the genital fissure.

In the case under consideration, the cervical canal was completely inverted on the right side, the cervico-uterine sulcus (Donnce) had disappeared, the cervico-vaginal sulcus was shallow. On the left side, the cervico uterine and cervico-vaginal sulci were perfectly distinct. In consequence of the complete inversion of the right half of the cervix, the long axis of the uterine globe was sensibly deflected to the left of the median line. The vaginal portion of the cervix was short, and lacerated on either side to the vaginal junction. The inverted uterus was perfectly mobile, and no trace of inflammatory infiltra could be detected about the pelvic peritoneum or in the connective tissue. The position of the ovaries, tubes and round ligaments could not be mapped out with any degree or certainty.

2. Symptoms.—The writer thought it was fair to assume that the inversion of the uterus, in the case under discussion, occurred at the time of delivery. The weight of probable evidence is in favor of this assumption. The inversion must have occurred before the third week following labor, because at that time the presence of an intra vaginal tumor was discovered by the patient. This interval of three weeks was spent quietly in bed in the dorsal decubitus. The condition for inversion would be at no time during this period so favorable as during or at the completion of the third stage of labor. During this period no cause adequate to the result was in operation. On the other hand, during or at the completion of the third stage of labor, all the causes and conditions known to be necessary to the production of inversion were present, *i. e.*, the enlarged and relaxed corpus. dilated cervix, traction on the cord, possibly, also fundal insertion of the placenta (Hennig), and paralysis of the placental site (Rokitansky). If this assumption be granted, the case demonstrates that inversion of the uterus may "take place without sufficient symptoms to attract attention or to indicate that anything has gone wrong." Dr. J. C. Reeve has already called attention to this subject, and has sustained the proposition just quoted, by the citation of well anthenticated cases, in his classical essay, "Moot points in Regard to Inversion of the Uterus."

The patient, a woman of at least average intelligence, and the midwife, a "qualified" practitioner, *i. e.*, examined and registered by the State Board of Health of Illinois, observed no symptoms sufficient to attract attention or to indicate that anything unusual had happened at the time of delivery. A well-known and skilful obstetrician saw the case forty-eight hours after the probable time of the occurrence of the accident, and the absence of symptoms was so marked that the condition escaped his critical observation. Seventy-two hours after the probable time of occurrence of the accident the patient was seen by another thoroughly competent medical man, who also failed to recognize the complication upon his first, or upon any subsequent visit.

Dr. Reeve's proposition has an important bearing upon the differential diagnosis between inversion of the uterus and sessile polypus, and indicate that no reliable evidence can be obtained from the history of the case.

3. Treatment.—Carl Braun, in 1851, introduced a simple, convenient and safe method of the vaginal tamponade (colpeurysis) by means of a caoutchouc bag (colpeurynter). The reduction of chronic inversion of the uterus by colpeurysis was inaugurated by a communication from Tyler Smith to the Royal Medical and Surgical Society of London, April 13, 1858. In this communication Tyler Smith reports the reduction of a chronic inverted uterus by taxis in connection with continuous elastic pressure by means of Gariel's air-pessary. Barrior, of Lyons, in 1852 employed an air-pessary to retain the uterus in position, but with no avowed intention of using continuous elastic pressure to effect reduction, as intimated by Donnce. M. P. Teale, Jr., of Leeds, and West effected reductions of the inverted uterus in 1859 by Tyler Smith's method. It was reserved for Sockenthal, as remarked by Thomas, to demonstrate in the same year that reduction could be effected by the colpeurynter unaided by taxis.

As a matter of practical import, the colpeurynter used in the case described was a quadrilateral, caoutchouc bag, 10 cm. long, 3 cm. wide when collapsed, and possessing a maximum circumference of 21 cm. when distended. It is known in the shops as "No. 5 pear-shaped watery-pessary." The selection of a properly shaped and properly sized instrument demands some care. Dr. Byford's treatise is the only

American textbook on gynæcology which gives an adequate exposition of colpeurysis as one of the methods of reduction of chronic inversion of the uterus. This fact may be interpreted as indicating the method is not extensively practiced in the United States, and a survey of American medical literature upon this subject will serve to confirm such an opinion. In the very large majority of cases more heroic measures have been adopted. On the other hand, colpeurysis has largely replaced all other modes of treatment in Germany. Fritsch says, "Gradually almost all gynæcologists have gone over to Braun's colpeurynter." "The treatment with the colpeurynter is the sovereign method of treatment in cases of inversion of the uterus. Inversions yield to it which have resisted all other methods. The resistance which the cervix opposes may be so great that Muzeaux (four) forceps inserted into the portico tear out, and still the uterus remains unmoved. If colpeurysis is now resorted to, earlier or later a successful result is bound to follow without danger. It is therefore urgently advised to give up every attempt at forcible reposition of the uterus." He adds the significant sentence, "Colpeurysis cannot be held as without effect, even if the end is not immediately attained, it may be continued with interruptions fourteen days, yes, even three weeks." The best method of treatment of chronic inversions," says Rheinstaedtor, "is the introduction of a colpeurynter, which is gradually distended with water." Schroeder has repeatedly effected the reduction of the chronic inverted uterus after the failure of all efforts at manual reposition.

(*To be concluded.*)

FOREIGN CORRESPONDENCE

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Treatment of Gout—Renal Lithiasis—Pathogeny of Renal Congestion—Bright's Disease without Œdema and Albuminuria.

In a very interesting paper by Dr. Lecorché, on the *Treatment of Gout*, the author divides the therapeutics of this affection into two distinct parts: 1. The treatment of the gouty subject in the intervals of the attacks, which he considers the only important and truly fruitful part of the treatment. 2. The treatment of the attack. After having thoroughly studied the subject, both theoretically and clinically, and after having carefully studied the influence of the so-called anti-gouty substances commonly in use, from the various mineral waters to the preparations of colchicum and of the salts of lithia, Dr. Lecorché formulates his conclusions as follows: If there be any specific in medicine, colchicum and the salicylate of soda may be considered such for gout and its manifestations; the former reduces the proportion of lithic acid in the blood, while the latter favors its elimination.

One of the causes of the non-success of these drugs in certain cases, is the extreme reserve with which they are too frequently administered; they then do more harm than good. The author concedes to Professor Germain Sèe the credit of having been the first to employ the salicylate of soda against gout, and had brought out the advantages of this substance in the multiple indications of this affection, in which it is utilized for the analgetic power of the medicine, its decongestive or resolving property, and for its power of eliminating lithic acid in certain cases. In fine, the faculty of using, in part, the glycocol, which constitutes one of the most important albuminoid substances. The conclusion of Dr. Lecorché is that the physician should intervene in all cases of gout: 1. By the aid of diet to prevent the gouty diathesis. 2. By the aid of diet and of alkalies to combat the diathesis and to prevent the attack of gout. 3. By the aid of specifics, colchicum and the salicylate of soda, in the generality of cases, to combat the attack of articular or visceral gout.

In connection with the treatment of gout, it may be interesting to learn what Professor Jaccoud says on the subject. He, too, lays great stress on treatment in the intervals between attacks, or, if individuals of a gouty diathesis, temperance in all things, and regularity in the hours of repasts and those devoted to sleep being his fundamental precepts. The diet should be mixed, but more vegetable than animal. Highly nitrogenous substances, such as game, crustaceæ and sea-fish, should be avoided. Pure water should be the general drink, or if this be not well tolerated, a little white or red wine may be added thereto, or a little weak beer may be allowed. The gouty subject should go to bed early and rise early, and take daily moderate exercise. This treatment should be followed during the whole life, and as a complement to the above, Dr. Jaccoud prescribes that in spring and autumn a course of butter-milk should be gone through. Should these hygienic measures not be sufficient to modify the economy and to rid the patient of the divers gouty manifestations, therapeutic agents must be resorted to. These consist of the daily use of alkaline waters, the benzoate of lithia, in doses of from 0 centigrammes to 1 gramme per day. The bowels should be kept freely moved by small doses of some saline aperient, the best for the purpose being Carlsbad salts, which has the advantage over the other purgatives of having the faculty of increasing the urinary secretion, whereas with most others it becomes scanty and loaded with sediment. A season or two at some of the following watering places would act as powerful adjuvants to the routine treatment: Ems, Royat, Kissengen, Homburg, will be found best suited for the articular disorders which remain after gouty attacks.

For manifestations of renal lithiasis the patient should be sent to Coutrexéville, Evian, Martigny (Vosges), and Vittel. Finally, the waters of Ragatz are best adapted for gouty patients in whom the malady has been of long standing, and who are weak and in a cachectic condition. The treatment during the attack consists in enveloping the joints with cotton wool, narcotic liniments, low diet, or rather

one which must be modified according as the patient is febrile or apyretic. The best article of diet at such time would be milk. The bowels must be kept free, not, however, by strong purgatives. Thus it may be seen that Professor Jaccoud is in favor of the "expectant" mode of treatment during an attack of gout, and it is only when the pains are exceptionally severe, or when the fit is of abnormal duration, that he could prescribe the salicylate of soda (3 grammes per day), or the wine of colchicum in doses of from 5 to 6 grammes in the twenty-four hours.

At a recent meeting of the Medical Society of Hospitals, Dr. Albert Robin read a paper on the *Pathogeny of Congestion of the Kidney*. From two cases which came under his own observation, he was induced to conclude that cold excites the reflex action of these organs, which then refuse to let pass the waste tissues of the organism. These, not being eliminated, poison the patient in different degrees, according to the duration of the suppression of the functions of the kidneys.

At the same meeting Dr. Dieulafoy made some observations on cases that came under his notice, exhibiting all the symptoms of Bright's disease minus œdema and albuminuria. The autopsy confirmed the diagnosis that was made during life.

In one case, that of a man 63 years of age, and who had not been alcoholic or syphilitic, the autopsy revealed a typical form of arterio-sclerotic nephritis. The heart was small and sclerotic, with notable atrophy of the muscular tissue. With reference to these cases Dr. Dieulafoy dwelt on the fact that there is no strict correlation between albuminuria and Bright's disease. There are some symptoms, however, which will enable us to recognize the renal lesion. These consist chiefly in the troubles of the urinary secretion, and above all pollakiuria, or necessity of frequent micturition during the night, cephalalgia, oppression, occular disturbances, auditory troubles (deafness, rumbling), the sensation of "doight morts," or numbness in the fingers, which latter the author considers pathognomonic. He referred also to Professor Bouchard's test, according to which, the secretion of urine being a process of depuration, it may be conceived that if the kidneys work badly, the urine which they excrete, not containing all the ordinary products of elimination, will be less poisonous than normal urine, which fact has been verified by experiments on animals. For instance, while in the normal state, 15 to 20 grammes of urine suffice to kill a rabbit, it would take 250 to 300 grammes of Brightic urine to produce the same effect. It is precisely this last circumstance which is found in Bright's disease, and which, in certain exceptional cases can, even in the absence of albuminuria, establish the diagnosis of nephritis. In the cases which came under Dr. Dieulafoy's notice the different varieties of albumen were very carefully sought for, even those which are not revealed by the ordinary tests. A. B.

DOMESTIC CORRESPONDENCE

THE MEDICAL SERVICE OF THE U. S. PENSION BUREAU.

TO THE EDITOR OF THE JOURNAL:

Dear Sir:—I have been much interested in a communication which appeared in THE JOURNAL for November 20, entitled "The Medical Service of the U. S. Pension Bureau," and written by Dr. P. S. Conner, of Cincinnati. Briefly stated, the article referred to is simply an arraignment of the Pension Examining Boards, as at present constituted, virtually charging the members thereof with professional incompetency, and proposing as a specific for the evils complained of, that the entire business of the examining of pensioners, and applicants for pensions, be transferred to the Medical Corps of the Army. After detailing at length the duties of the examiners, Dr. Conner says: "Even the most hurried glance at what is required of an examining surgeon, will suffice to show that he ought to be well educated, experienced in the detection of pathological conditions, of good judgment, honest, and independent, having regard solely to what is right and just to the applicant on the one hand, and the Government on the other."

Thus, basing his plea for the charge above referred to, upon the assumed fact that the Boards, as at present constituted, are destitute of the qualifications which he mentions—in other words, that they are composed of physicians who are *not* well educated, *not* experienced in the detection of pathological conditions, *not* of good judgment, honest, and independent, etc. Now, upon all these points, I take direct issue with Dr. Conner, and express the belief that he cannot make good any of the propositions which he advances. From a personal knowledge of the make-up of several Boards of Pension Examiners, the writer believes that they are composed of a class of physicians who, as a rule, will not in the least suffer by comparison with a like number of the medical officers of the Army, in all that relates to education, experience, and in the possession of the various qualifications necessary for thorough and impartial examinations. The Pension Examining Boards are, in the main, composed of the best medical talent in the various cities and towns wherein the Boards are located. A very considerable number of their members are men who have had a large experience as Army surgeons during the late war, and who have made high reputations in long and successful professional careers. The Boards, as a rule, are thoroughly equipped with all the various aids to diagnosis which the inventive genius of the profession is continually giving to the world.

The competitive examination, which Dr. Conner states is a requisite to membership in the Medical Corps of the Army, has by no means succeeded in placing that Corps upon so high a plane as our author would have us believe, for it is a well known fact that these examinations are not, never have been, and in the nature of things never can be, wholly freed from personal and political influences. It is

not the purpose of the writer to belittle or to misrepresent the Medical Corps of the Army. That body is doubtless composed, in the main, of men of a good degree of professional ability; men competent to discharge, intelligently and well, the duties devolving upon them; but I desire simply to show that the comparison which Dr. Conner institutes is not warranted by facts. It is, however, true, that just as the "West Pointer" was, during the late war, disposed to arrogate unto himself all military knowledge, so was the regular army surgeon disposed to put on airs over the volunteer surgeon; but that this assumed superiority was groundless, the writer, as well as many others, had ample opportunity for observing. In field, or in post hospital, no better work was done than by the volunteer surgeon.

But I have not yet mentioned all the beneficent results which Dr. Conner is confident would ensue, both to the Government and to the pensioner, should his plan be adopted. He says that, as a result of the adoption of his scheme, "deserving applicants would get *what they deserve*, and the ratings would be far more uniform than at present." To this I reply, that deserving applicants, as a rule, now get what they deserve, and in regard to the uniformity of ratings, what reason have we to doubt that as great a diversity of opinion would exist among the Army surgeons as now exists. Dr. Conner says further: "There would be no more complaints or charges that pensions were recommended or advised against because of the applicant's connection with this or that political party." To this we reply, that not many complaints of this nature have been made, and these, no doubt, for the most part groundless. Yet surely, the surgeons of the Army are members of some political party, and there is no earthly reason why they would not be just as susceptible to political influences as are the present examiners.

Dr. Conner also informs us that, under his plan, "the end results of excisions and of amputations might be determined, as *they now cannot be!*" The italics, and exclamation point, are mine. Also, he says further: "The Government would be benefited, meritorious soldiers and sailors *in some degree rewarded* for privations, sickness, wounds," etc., but this is enough. He also states, and truly, that the establishment of such a board as he advocates was, at one time, strongly advocated by the authorities of the Pension Bureau. He might have stated further, that the measure failed, because the debate thereon in Congress completely demonstrated the utter impracticability of the measure, and also during that discussion, the present system of pension examinations was warmly endorsed for its thoroughness and efficiency, by leading members of both houses of Congress, and of both political parties.

The plan proposed by Dr. Conner would give us one pension examiner where there are now about thirty, an average of about one Board to a State. Under this management, it is hardly necessary to state that thousands of pensioners could not afford the time and money necessary to reach the Board, while under the present arrangement, few need to be absent from home over night in order to reach some Board of Examiners; while should the Government, as Dr. Conner suggests, undertake to pay their traveling expenses, the present cost to the Government would be greatly increased, while there is not the remotest ground for believing that any compensating good could result, in the way of increased thoroughness or efficiency of the examinations. I am, very truly,

L. Brown, M.D.

Postville, Iowa, Dec. 1, 1886.

BOOK REVIEWS.

The Physician's Visiting List (Lindsay and Blakiston's) for 1887. Philadelphia: P. Blakiston, Son & Co. Chicago: W. T. Keener.

This "Visiting List" is now in its thirty-sixth year of publication, and is so well known to the profession that but little need be said of it. It is published in several sizes, for 25, 50, 75 and 100 patients weekly, at prices ranging from $1.00 to $3.00, the latter price being for large lists in two volumes (January to June, and July to December). A perpetual edition is also published, and an interleaved edition at a moderately increased price. It contains calendars for 1887 and 1888, Marshall Hall's "ready method in asphyxia," a table of poisons and antidotes, tables of the metric system, a dose table rewritten to accord with the sixth revision of the U. S. Pharmacopœia, a table of disinfectants, directions for the examination of urine, a table of standard reference books, table of incompatibles, a new table for computing the period of utero gestation, a list of new remedies for 1886–7, Sylvester's method for artificial respiration, and a diagram of the chest, besides the blank leaves for visiting list, monthly memoranda, addresses of patients, nurses and others, of accounts rendered, memoranda of wants, obstetric and vaccination engagements, record of births and deaths, and cash account.

MISCELLANEOUS.

Prof. Kolomnin's Suicide After a Fatal Operation.—Professor Kolomnin, of St. Petersburg, recently committed suicide after the death of a patient from cocaine. The patient, says the *British Medical Journal*, who was operated on was a young woman who had been sent from the medical out-patient department into the surgical wards. Professor Kolomnin found a large ulcer of the rectum, which he believed to be of a tuberculous nature; he decided to scrape and cauterize it. Proposing to employ cocaine as an anæsthetic, he made a number of inquiries as to the maximum dose, and looked up the literature of the subject, which comprised about thirty cases, in which from 6 to 90 grains (the Russian grain = 1.0417 grain English), had been employed. Most of these cases were operations for crushing urinary calculi, and though the bladder, if healthy, is

known to be quite unable to absorb such a quantity of the drug, in some cases vesical disease was present, and in these absorption must have occurred. Again, Professor Dieulafoy had employed 48 grains of cocaine in a rectal operation with success. Having regard to all these reported facts, Professor Kolomnin thought himself justified in disregarding the opinion of his colleague, the Professor of Pharmacology, who said he considered two grains a maximum dose. He, however, decided to give rather less than half the quantity used by the French professor, and to administer it in four rectal injections. After the third of these, it was found that anæsthesia had not been produced, so Professor Kolomnin introduced a speculum, touched the surface of the ulcer with a dry sponge, and gave another injection, which produced anæsthesia, though not of a very complete character. The ulcer was scraped, and an oiled plug left in contact with it. The pulse was then somewhat rapid. Forty-five minutes afterwards the pulse became greatly enfeebled, and the respiration labored, the face and hands assuming a livid appearance. Everything was tried without avail—faradization, artificial respiration, subcutaneous ether injections, ammonia, stimulating and nutrient enemata, and even tracheotomy, with inhalation of oxygen—death being evidently due to the toxic action of cocaine. In some quarters Professor Kolomnin was much censured, but he himself considered that, with the authority of numerous reported cases, he was not to blame for using the quantity of cocaine that he did. He, however, fancied that he had made an error in diagnosing the ulcer as of a tuberculous nature, and worried himself about having undertaken the operation. As to his own personal condition, he had lived for some years a most secluded life, devoting himself entirely to his scientific work, and making no intimate friends. He had latterly complained of palpitation and sleeplessness, and had become very irritable and, in some instances, forgetful, so that there is no doubt in his eminent colleague's mind that when he committed suicide he was not really aware of the gravity of what he was doing. The day before he had gone to Professor Botkin to ask him to give an address at a medical society for him, as he felt too unhinged to do it. This request was complied with, his own death serving, alas! as the subject.

Accouchement During Hypnotic Sleep.—In the *Wiener Med. Wochenschrift* a case is mentioned of a woman whom Dr. C. Braun succeeded in rendering unconscious during labor by throwing her into a condition of hypnotic sleep; the uterine contractions were particularly painful. They were equally violent during the period of unconsciousness, but the intervals were somewhat longer; dilatation of the passages took place in the most satisfactory manner, and delivery was speedily accomplished. The placenta was expelled into the vagina, and was easily withdrawn with the hand. On awakening, the patient did not complain of pain, and afterwards slept naturally for several hours. One of the most interesting features of the case was that the uterine contractions induced contraction of the abdominal muscles without awakening the patient. Hæmorrhage was very slight.—*British Medical Journal*, Dec. 11, 1886.

The Pasteur Institute.—M. Pasteur states that the amount subscribed to the proposed Institute now amounts to almost 1,800,000 francs, and that contributions still continue to come in. English brewers, who have been shown that they are indebted to Pasteur for his experiments on ferments, have contributed largely.

Eulylyptol is the name given by Dr. Schmeltz to a mixture containing six parts of salicylic acid to one part of carbolic acid and eucalyptol, and which he considers a better antiseptic than iodoform, corrosive sublimate or carbolic acid. A small quantity added to urine will preserve it for months.

Cholera in Europe.—Several deaths from cholera have recently occurred in Bulgaria. The disease originated, it is said, with a Hungarian peasant bringing clothes with him of a man who had died of cholera. Cholera has reappeared at Gorizia.

A Health Exhibition in Warsaw will be held in May and June, 1887. The exhibits will be chiefly Polish, but foreign goods will not be excluded.

The U. S. Life-Saving Service has saved, from its establishment in 1881 to July 1, 1886, 28,317 persons.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 18, 1886, TO DECEMBER 24, 1886.

Major W. H. Forwood, Surgeon, granted leave of absence for one month. S. O. 129, Dept. Dak., Dec. 16, 1886.

Capt. J. V. Lauderdale, Asst. Surgeon, ordered from Ft. Concho to Ft. Clark, Texas. S. O. 174, Dept. Texas, Dec. 16, 1886.

First Lieut. Edward Everts, Asst. Surgeon, ordered from Ft. Grant to Ft. Apache.

First Lieut. Chas. F. Mason, Asst. Surgeon, ordered from Ft. Huachuca to Ft. McDowell.

First Lieut. W. B. Banister, Asst. Surgeon, ordered from Ft. Wingate to Ft. Lowell.

First Lieut. W. D. Dietz, Asst. Surgeon, ordered from Ft. Stanton to Ft. Bayard. S. O. 136, Dept. Ariz., Dec. 16, 1886.

First Lieut. A. S. Polhemus, Asst. Surgeon, ordered for duty as Post Surgeon at Ft. Gaston, Cal., relieving First Lieut. H. I. Raymond, Asst. Surgeon, ordered for duty at Angel Island, Cal. S. O. 123, Dept. Cal., Dec. 13, 1886.

First Lieut. C. L. G. Anderson, Asst. Surgeon, temporarily to duty at Whipple Bks., Arizona. S. O. 132, Dept. Ariz., Dec. 7, 1886.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE THREE WEEKS ENDED DECEMBER 18, 1886.

Banks, C. E., P. A. Surgeon, granted leave of absence for twelve days. Dec. 16, 1886.

Carrington, P. M., Asst. Surgeon, granted leave of absence for fifteen days. Dec. 6, 1886.

Williams, L. L., Asst. Surgeon, upon expiration of leave, to proceed to Boston, Mass., for duty. Dec. 17, 1886.

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ORIGINAL ARTICLES.

THE PROBLEM OF THE INEBRIATE.[1]

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Speaking after the manner of the street, we may say that there is no harder conundrum proposed to modern civilization than this same inebriate. Utterly useless to himself, he becomes a nuisance to everybody else. This difficulty meets us at the outset of the discussion, what is meant by the inebriate? We are accustomed to consider drunkenness and inebriety as synonomous terms, and yet not every man who gets drunk is what we call an inebriate. The best man in the world, at least in his age—it is true that age was sunk rather low—was Noah, and he was barely out of the ark when he got drunk; yet, in view of his previous as well as subsequent history, we should hesitate to call him an inebriate.

To better illustrate the meaning of the term inebriate, I present to you in this paper the brief memoir of a typical inebriate, no fancy sketch, but one of real flesh and blood. For obvious reasons I withhold his name, but for convenience of designation will call him "the Col."—a common title about Washington—which will answer our purpose as well as any. This is not a temperance lecture in disguise, introducing the Col. as an object-lesson, after the manner of the Athenian teacher who exhibited a drunken man to his pupils. He is presented simply as a pathological specimen, and I do this with no feeling that in doing so any confidence is violated or that I am exposing anything which the Col. would have preferred should be kept covered now that he is gone, for this man, while living, had no affectation of virtue; delicacy of feeling was a weakness of which he was never suspected; public opinion he despised; the wages of sin were satisfactory to him so only he had the sin; he was content to pose as an "awful example;" and I think he would have consented that his viscera should be photographed to illustrate Sewall's lectures on the coats of the stomach, merely stipulating that their membranes should be occasionally moistened with whiskey. What study the anatomist might make of his bones when he had done with them, what lesson the moralist would draw from his finished life, were matters of profound indifference to him, as I do not think he expected to pass this way again.

My first acquaintance with the Col. was in May, 1878, when he was brought to St. Elizabeth on the certificate of two physicians to his insanity. In May, 1886, almost exactly eight years later, I parted with him for the last time, to hear within three weeks of his death. Just turned of forty when I first knew him, and, looking only on that magnificent physique with which Nature had endowed him, he would pass for a young man. Scrutinizing more closely you saw that the arcus senilis had come, the vital energies burned down, the wit was at its dregs, and in every sense was it true that the virtue had gone out of him. There was left only an insane thirst for whiskey, and, what his uncle in a conversation with me once styled "his fatal facility in writing." The latter, although deterlorated with all the rest, still afforded him, as a newspaper hack writer, a precarious income from his articles. These were society articles of the lightest sort, but with now and then a scintillation of the old wit which still "set the tables in a roar." All else was gone; property, if he ever had it, positions of trust which he had held and lost by his vices, and "troops of friends" that he had alienated; for this Bohemian prince of dead-beats was as supremely selfish a man as I have ever known. The affection of two wives had been wasted on him; the devotion of the last, which was something inexplicable, availed no more to turn him to virtuous courses than signing the temperance pledge did to wean him from his cups; and the influence of both had less restraining power over him than the lightest whiff from his cigar. As the typical reformed inebriate he was the making and the undoing of I know not how many temperance organizations. Of the various antidotes for drink he was the universal solvent: the thirst within him was his one strong point, the only thing that waxed not old.

What was the disease? Looking for intellectual insanity, you did not find it; yet there were observed phenomena psychic in character worthy of note. When first received, and so long as the alcohol was circulating in his tissues, there was more or less incoherence and confusion of ideas, but apparently no more than would follow a debauch in any one. Then came a period of rest, when everything was first class and he apparently at peace with all the world; was even tolerant of the vagaries of the insane patients about him; life was a pleasant jest, and his comfortable shelter in an insane hospital the greatest

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joke of all. Then came a time when life was real and of a very bitter earnest. Sore-headed was no name for it; he found fault with everything; complained of his food; abused his wife; maligned his nurses; made even the unfortunate insane who came within his reach, miserable by one diabolical device or another; then claimed that his own life was being made wretched by being immured with grinning, idiotic lunatics, and attendants of a still lower order of intelligence. Still held in durance, he would, after months of enforced abstinence, his periodic cravings for rum remaining unsatisfied, become moody, dull, almost imbecile, as if a kind of mental dry-rot had come over him. Now let the opportunity be given him to rouse his brain and liver by a fortnight's debauch and its accompanying abstinence from food; the old life would come back; the wit sparkled again, and, with Bulwer's Margrave, he felt the elixir tingling in his veins, for

> "Like to the Pontic monarch of old days,
> He fed on poisons, and they had no power,
> But were a kind of nutriment."

From a moral standpoint the mental obliquity, not to say aberration, was simply appalling. This was by no means exceptional in the Col.; it is the keynote to all these cases of inebriety, but I take him as the illustration, and remarking the keenness of his wit and the correctness of his observation, associated as it was with the most utter disregard of his own best interests, and his complete helplessness in the presence of stimulants, I wondered how long, even with the support of the certificate of insanity from two eminent physicians, I could hold him against a writ of habeas corpus, brought before the tribunal which, in the Guiteau case, had pronounced a knowledge of right and wrong to be the true criterion of responsibility, and that regarded moral insanity as only a synonym for depravity. So, doubtingly, I often let him go.

"Not as other men are,"—but leaving to you, as medical men, to say what ailed him, let me rapidly outline his eight years' record at St. Elizabeth, premising that this was only about one-third of a career as completely bounded by whiskey as the world of the ancients was by the ocean. In that period of eight years the books of the hospital show that he was sent to the institution no less than ten times as insane; the insanity was certified to by two physicians; and once he remained for a considerable time on a voluntary commitment. The time thus passed with us amounted to two years and four months, or something less than one-third of the whole period. There were also voluntary visits, of short duration, where no record was kept. It is safe to say that during the eight years he was for an equal length of time "sobering up" in one of the city hospitals, the work-house, the alms-house, or the sheltering arms of some other eleemosynary institution. It was during a stay in one of these havens of rest, already becoming restless for a drink, that he writes he had "now run the gauntlet of all the institutions (naming them) except a lying-in establishment, of which he yet hoped to find one sufficiently respectable for him to enter, unless, as he feared, he should be found physically disqualified for the situation."

Seeing how large a portion of these eight years was passed in institutions of one kind and another, one wonders when he was sober, just as his frequent appearance at the bar of the police court led Judge Snell to exclaim, "Col., are you always drunk?" To which, with the gravity of a pundit, the Col. replied, "Does your Honor take me for a millionaire?"

There was a noticeable periodicity about the Col.'s infirmity. Remaining at the hospital, as a general rule, only so long as he could be induced to remain voluntarily, it is instructive in our pathological study of the case to note how frequently, after a residence and abstinence of but little more than a month, "important business" made it imperatively necessary that he should return to the city and "his wallowing in the mire." Of his eleven recorded sojourns with us I find six of duration as follows: two of one month and seven days each; one of one month eight days; one of one month twelve days; one of one month eleven days; and one of one month four days. The two longest detentions, seven months and twelve days, and four months and five days, respectively, were both after strenuous voluntary efforts for his own commitment, and were associated with a long preliminary training in police court and work-house. There were times when he was anxious to get into the hospital—and accomplished it against decided opposition—as at others he was as anxious to get out. He always went forth confident in his strength; he came back like the prodigal in his weakness, but with this difference, that the hospital authorities soon got over ordering *veal* on his arrival.

Running over my letters and memoranda of that period, I find "the old, old story," with endless repetitions, from which I make a few extracts as samples: (Before going out.) "My affairs have got to a point now where I *must* lay hold of them and straighten them out. . . . As far as whiskey is concerned (I find I must refer to the subject, nauseating as it is), you need have no fear," etc. (After going out.) "He appreciated your kindness as much as I do, and if he hadn't 'fallen by the wayside' we would have come over to pay you a visit; but before he got time to exhibit his sobriety he got drunk." (Some time later.) "Dear Doctor: The poor soul—I think I may reasonably say—*which* accompanies this note, left Providence Hospital on last Saturday week and took his old room, donned his new forty-five dollar suit, and got drunk. At two o'clock they had to send for the police. He broke the front door, assaulted the cook and the chamber-maid, and produced general hilarity. He has been thoroughly dead drunk ever since (not eating anything as far as I can learn); sleeping up an alley in preference to a bed; and has been three times arrested. . . You will see his condition. He has been in the station for thirty hours, and is rational. For the Lord's sake keep him over there for the rest of his life."

So I might go on for an hour illustrating the varying phases of his infirmity from correspondence and note books, but with my limited time a single episode—that of the Montana trip—must suffice:

In January, 1883, an army officer, moved by I know not what good impulse, secured a fairly remunerative position for the Col. in the Quartermaster's Department of the U. S. Army, station to be in Montana. It is needless to say that our hero was overjoyed. Thenceforward there were to be no more spicy letters from "our occasional correspondent," dating nominally from Saratoga, from Newport, or from the Thousand Isles, but really written within the purlieus of a lunatic hospital. And there were "to be no more cakes and ale." Here was an opportunity to redeem himself or perish in the attempt. I thought it would be the latter, for in the dead of winter and the destination Montana, I felt morally certain that he would freeze to death on the road. He left the hospital on Thursday to make the necessary preliminary arrangements to start on Saturday night for his destination. I need hardly say that one of these preliminaries was to get so drunk on Friday that he was brought to the station house in the evening perfectly unconscious. He got out later, was found asleep on the floor of the telegraph office, and again gathered in. A devoted friend writes: "He hurried off on Saturday night but illy equipped for his five days' journey, promising to write from Chicago. I haven't heard a word, and I believe he is drunk, or dead, or *both*," and adds, "I never expect to see him again, but if *I* do *you* will." We felt that at least St. Elizabeth was done with him. Like Mark Twain watching the Arab on his foot race up and down the pyramids, I said now he *will* slip, now he *must* break his neck, certainly in that all day ride in a coach in Montana, with a temperature of 40° below zero, he can't fail to freeze to death. But he didn't; other passengers were lifted out stiff and frosted, but alcohol will not congeal. In a letter from a hospital of the Sisters in Montana he says of his journey: "At Deer Lodge I strengthened the garrison with a quart bottle in my overcoat pocket. The result was I arrived at Helena dead broke down from fatigue, cold, want of food and sleep, and the awful and to me hitherto unknown poisons in Rocky Mountain whiskey." But though he did not freeze, he was at once in hot water with the military authorities. It was on Gen. Terry's request to be relieved of the Col.'s presence in his department that Gen. Sherman wrote this famous endorsement, which appeared in the daily press at that time: "This man was appointed for the purpose of developing the latent good which is supposed to be in him. Let him be subjected to a severe course of discipline; send him to jail; put a ball and chain on him; shoot him if necessary, but don't discharge him." Nevertheless, he was discharged, and like Mark Twain's Arab, he brought up at the starting point. As the officer helped him out of the ambulance at the portals of St. Elizabeth, I said: "Well, Col., I didn't expect to see you here again." Pretty drunk, but with all the old time assurance, he replied: "All roads lead to Rome, doctor."

His last residence at St. Elizabeth was one of his longest. After much buffeting he had procured for himself the necessary order of the District Commissioners admitting him to the hospital. He came, to use his own expression, "to have us grow a moral nature in him as a man would grow a moustache." There was sore need of it, for "the keepers of the house" had begun "to tremble, and the strong man to bow himself." So he rested for the winter. I committed the entire management of his case to my able assistant, Dr. Stack, promising that he should have all the credit if he cured him. I gave him *carte blanche*—he might put the batteries on him; soak his brain in hellebore; purge him with hyssop; cleanse his heart—do anything and everything, so only he resuscitated his moral nature. It is needless to say that the doctor did his level best, and in the spring told me he thought the time had come to test the Col.'s strength by sending him to town unattended. He went, and came back *sober*. A second trip, and wonderful to relate, he returned as *perpendicular* as he went. I said to myself, Has the growth indeed taken place? Is it possible that there was any moral nature left to grow? And has the change really come that I did not look for before the resurrection? And even then, while I wondered, there came into his brain a scheme for getting aid from his uncle and going on a ranch in the far West to commence life anew, and he began to talk of removing to the city to make his arrangements. Then I knew what was coming. I urged him to remain where he was and leave to others to make his arrangements. But he had reached the time when he wanted no advice; so we parted, he going on his own wild way to the end.

He was born with godlike faculties, but he drank of the cup of Circe till it transformed him to a beast. I know not what vice of organization, what inherited taint or what sinful indulgence first wrought this woe. Whatever it was, he was so hopelessly enmeshed in its folds that from the first time that I saw him his moral responsibility was, to say the least, an open question. If it was sin, has he not suffered for it? If it was disease, shall not the sufferer rest? I like to think of him at his best in a life that had but little best to recommend it. He was better than he wished to seem. I have seen him take slyly from his pocket and give to the dog who accompanied him on his morning walk portions saved from his own breakfast, and then apologize for what might seem a human weakness. Let us, in our human weakness, each cast a shard above him for sweet charity. Taken from out the freezing alleys and gutters where he had so often lain in this world, I hope that burning thirst has not followed him whither he has gone, and I cannot think of him as lying cold o' nights.

I have not given you here an exceptional case; Washington is full of them. I doubt not they are within the experience of every one of my audience. Treating it only as a pathological specimen in this necessarily fragmentary and hurried sketch, I have left unrevealed the tragedy in the home, but it is there none the less. And that is the most moving, realistic side of all these cases. Every month—nay, almost every week, they come to me to know what they shall do that their friends may be saved? Alas! that I have no answer I can give. Mothers bring to me their breaking hearts in confidence that I shall not profane here; wives with a devotion which tells

me the age of martyrdom has not passed; sisters with streaming eyes implore me to save their brother —my brother and your brother too. It is time that as medical men we had some answer to make to this question, What shall be done with them? As scientists curious of the bacillus we forget the worm of the still. As *savants* we show a pardonable enthusiasm over the shards of a jug on which we may with laborious pains decipher the symbol of Annubis or Osiris, but manifest an inexcusable indifference to that human "treasure" which we have in these frailer than "earthen vessels" on whose shattered fragments we might still trace the lines of the image once stamped there. It is time that the scientist and the scholar spoke; that he turned from the contemplation of cliff dwellings and bone caves, and drew out from dens of infamy and caverns of despair where he has been hiding this troglodyte of our time. When the medical men of the community move in earnest in this, we shall have public sentiment, and out of that sentiment will come law, and an answer to the prayer, "Lord, that I might be healed."

NOTE. Let me venture a word in a foot note touching the solution of this problem, lest I be accused of leaving my moral lesson without a moral.

The inebriate can be controlled legally in one way or another; there is no doubt about this. For a person who cannot take care of himself the law provides a guardian; or when a man from any cause so far loses self control as to become dangerous to others, society has the right to restrain him. Such dangerous person, either *in posse* or *in esse*, is the inebriate; and at all times he is unable to take care of himself.

Having shut him up, the next thing is to keep him. Hitherto the detention has been too short to afford a chance for reformation. Sentences for thirty days rather aggravate the craving for drink. For any lasting benefit a year's confinement is necessary with some, a lifetime with others. The commitment in confirmed cases should be for a term of years, with a power lodged in the court committing, and perhaps also in the board of managers of the reformatory, to grant furlough or ticket-of-leave, its continuance to depend on good behavior.

Such house of detention should be self-supporting or as nearly so as is possible to make it with a system of compulsory labor. Since idleness is a great incentive to drink, all able bodied inmates should be set to work at some productive industry. Whatever the institution falls short each year of being self sustaining should be made up from the District treasury out of funds received from licenses for the sale of intoxicating drinks.

The entire management of the establishment should be under the immediate control of an executive officer who should be a medical man skilled in his profession, with qualities of heart and brain fitted to his work, and an autocrat in his position. He will need the wisdom of Solomon, the patience of Job, an abiding hope and a double portion of that "charity which never faileth." Anything short of this will land him within five years in a lunatic asylum, and his institution in the slough where some so-called inebriate homes are already stranded.

In a majority of these cases a cure is hardly to be expected, for the malady is of many years', often of some generations', standing. But will it be a light matter to have made these inebriates decent, orderly, and self-supporting in industrial schools while they live, and to have taken their children out of the blight and shadow of a drunkard's home, and given them back their birthright? And for that "saving remainder," fallen but not lost, going forth restored, whose lives from ruined prospects and dead hopes shall rise again—with what line will you measure, in what balances weigh the value of such refuge to them?

CANNED FOODS AS A CAUSE OF ACUTE POISONING.

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When we take into consideration the enormous amount of canned foods put up and consumed each year, and the comparatively few cases of poisoning, both real and imaginary, that have been attributed to the use of canned foods, we ask the question, Is the use of canned foods injurious? 500,000,000 cans of food are annually consumed as follows:

Of salmon	an average	per	annum	of	.....	50,000,000	cans.
"tomatoes	"	"	"	"	.....	52,000,000	"
"corn	"	"	"	"	.....	30,000,000	"
"peaches	"	"	"	"	.....	15,000.000	"
"meats, oysters, fruits, vegetables, etc.					.....	253,000.000	"

In vegetables alone there are about 400 farms that have small canning factories, putting up the products of the adjoining land fresh from the fields. Adding these to the number of regular canning factories, we have about 800 in all. These figures do not include the canning of fruits, vegetables, etc., by families for their own consumption, which would increase the amount to a considerable extent.

Before coming to any conclusions regarding the injurious effects of canned foods, it will be necessary to consider the various materials out of which the cans are constructed as well as the composition of the contents of the cans. We will not consider the foods canned in glass, but will devote our attention to the foods put up in tin cans. Tin-plate is the form in which tin is used in canning food. It consists of thin sheets of iron covered with tin. There are several methods by which tin-plate is made, the usual one being about as follows: The very best refined sheet iron is first cleared of all oxide by immersing in dilute sulphuric acid, then rubbed dry with sand to remove all traces of the acid. It is then plunged successively into a bath of melted tallow and a bath of tin covered with tallow. On contact with the iron the tin forms a true alloy, which is covered with pure tin. The cheaper grades of tin-plate are dipped once or twice, while the best goods are dipped three times. One pound of tin will make twenty-eight plates of tin-plate 14 × 22 inches, and of the best grade. Commercial block tin, such as is used in the manufacture of tin plate, usually contains various other metals, but in such small quantities that, with the exception of lead, they are never found in the contents of the can, so we will not consider them.

A large quantity of tin-plate is made from an alloy of tin and lead, the proportion of lead varying from 1 to 50 per cent. or more. A grade containing about 10 per cent. of lead is as poor as is generally used in making cans. The greater the proportion of lead, the cheaper the tin plate. This alloy of lead and tin is more easily acted upon by the vegetable and fatty acids than pure tin. The principal examiner of chemicals in the U. S. Patent Office says that all commercial tin is alloyed with lead. Chemists who have examined cans for alloy of lead and tin find lead in almost every case. Dr. Onderdunk finds only two samples free from lead in a great number examined.

Dr. Darsh reports that out of a large number of cans tested, he found lead alloyed with tin in almost every case. Dr. Dagget has examined twenty cases of different brands and found lead alloy in every can. I have examined a great many different brands of canned foods, also the very best brands of charcoal tin used by our tinners, and found lead alloyed with the tin in every case; not one was free from lead. The most convenient test for lead alloy is to place a few drops of a weak solution of nitric acid (1 to 10) on the tin plate and allow it to remain a few minutes to react on the metal. If lead be present the nitrate of lead will be formed, and by placing a small crystal of potassium iodide in the centre of the acid, the characteristic yellow iodide of lead will appear. The chemical changes may be expressed by the following equations:

(a) $Pb + 2HNO_3 = Pb(NO_3)_2 + H_2$.

(b) $Pb(NO_3)_2 + 2KI = PbI_2 + 2KNO_3$.

If the tin is pure there will be no change of color on the addition of potassium iodide.

The ordinary solder used in the manufacture of tin cans is an alloy of tin and lead. Three grades of solder are in use: common solder, consisting of equal parts of tin and lead, fine solder, composed of two parts of tin to one of lead, and "coarse" solder, containing one part tin and two of lead. The old hand-made can was soldered from the outside, and rosin used as a flux. It was soon found that the work could be done faster by soldering on the bottom and top from the inside, still using common solder and rosin. Still later it was discovered that the same work could be done faster and cheaper by using a liquid flux, consisting of chloride of zinc and water. The caps are usually soldered on by means of the chloride of zinc flux. Some of this frequently finds its way under the cap and into the contents of the can. The Legislature of Maryland has passed a law prohibiting the use of this flux in canning foods. There has been a great deal of groundless prejudice against the use of machine-made cans. An attempt has even been made to boycott all cans made by machinery. I have tested samples of the tin plate, solder and flux used by one of the largest manufacturers of machine-made cans, and find the materials to be practically unobjectionable.

It would be impossible to give the analysis and composition of all the foods preserved by the canning process. Most, if not all of them, contain organic acids of either the vegetable or fatty acid series. The acids found are either natural in the fruits, vegetables or meats, or are the result of chemical change. In replying to the question, "Is the use of canned foods injurious?" we must take into consideration not only the tin-plate, solder, and flux used, but also the nature and composition of the food in its natural condition, and after partial decomposition has taken place. When we take elementary substances alone we find them harmless, as a rule. It is when new combinations take place, or old compounds are decomposed and poisonous ones are formed as the result of recomposition, that we look for harm. In the substances mentioned we have tin, lead and zinc present as baselous or positive radicals, and chlorine, vegetable and fatty acids as acidulous or negative radicals. From these we can have tin chloride or tin salts of the organic acids, lead chloride, or lead salts of the organic acids, or we may have zinc chloride or zinc salts formed by the union of zinc with the organic acids. Rosin used as flux does not combine with any of the metals; it is only when a liquid flux containing chlorine or a chloride is used, that we may have all of the above combinations. If chlorine or a chloride is used as a flux which of the metals, tin, lead or zinc, will it combine with? There is a law of chemical affinity known as "Bartholet's Law," as follows: "Whenever, on mixing two substances in solution, a compound can be formed by a rearrangment of their atoms, which is insoluble in the menstruum employed, such a compound will be formed and will appear as a precipitate." The liquid or juice in canned foods consists of water and in most cases of an acid. Chloride of zinc is soluble in water and acidulated water. Stannic chloride is soluble in water and acidulated water, stannous chloride in acidulated water. Lead chloride is almost insoluble in water and acidulated water. According to the law of Bartholet, the chlorine would enter into combination with the lead, and if in considerable quantity would be precipitated. Our works on toxicology do not mention lead chloride as a poison. The chlorides, oxides, hydrates and organic salts of tin, lead and zinc have never been found in sufficient quantities to give rise to the symptoms sometimes produced by eating canned foods. They have never been found in as large quantities as some of our textbooks give as the medicinal doses of these same salts. And again, we find that the symptoms of canned food poisoning differ materially from the toxic effects of the metallic salts.

The following symptoms have been recorded as occurring in acute poisoning from canned foods:

Brain—Headache, throbbing of temples, vertigo, delirium, stupor, coma.

Face—Livid.

Eyes—Red, suffused, lids swollen, pupils dilated.

Tongue—Fiery red, heavily coated.

Throat—Dry, burning sensation, extreme thirst.

Stomach—Want of appetite, repeated eructations, nausea, retching, violent vomiting, both bilious and alimentary.

Bowels—Tender, painful, griping, diarrhœa, violent colic, gastro-enteritis, very offensive stools, bloody stools, dark tawny liquid from bowels, stricture of rectum and colon, tenesmus, prolapse of rectum.

Respiration—Alternate strangulation and paralysis of lungs.

Temperature—Normal, 101° to 105° F.

Pulse—Weak and slow, thin, thready, 100 to 150.

Integument—No heat of skin, skin hot and dry, profuse sweating, fiery red eruption all over body, intolerable itching, rough skin, greenish or yellowish patches.

Kidneys—Urine scanty, loaded with urates, no sugar nor albumen.

Muscles—Convulsive tremors, all movements painful, cramps of thighs and legs, epileptiform convulsions, partial paralysis of extremities.

General Symptoms—Cross, irritable, great languor, extreme weakness, typhoid condition, cold extremities, etc.

We find most of these symptoms in cases of poisoning by the narcotic alkaloids of hyoscyamus, conium, stramomum, etc. The symptoms of acute poisoning by canned foods are not such as we find in corrosive metallic poisoning, but are such as would arise from the action of some substance having especial effect on the nervous system.

If poisoning does occur from eating canned foods, and does not arise from the tin-plate, solder, fluxes, or organic acids or their combinations, where does the poison come from, and what is its nature?

Putrefaction is the spontaneous (so-called) decomposition taking place in nitrogenous substances. As the result of this process we have artificial alkaloids, and extractive matter formed. Alkaloids are alkaline or basic substances found in organic matter. The *natural* alkaloids already exist in organic substances; the artificial alkaloids do not pre-exist in organic substances, but are the results of chemical changes, generally that of decomposition. When artificial alkaloids are formed by the putrefaction of dead animal matter they are called "ptomaines," or "cadaveric" alkaloids. When they are formed by the decomposition of animal matter under the influence of life force, they are called "leucomaines," or "animal alkaloids." There has also been discovered in both living and dead animal matter non-crystallizable nitrogenous matter, called extractive matter. All of these three classes of animal nitrogenous substances are highly poisonous even in very small quantities. The extractive matters possess great toxic properties. The leucomaines are not found in canned foods. There is little doubt that the artificial alkaloids are the cause of poisoning in canned foods. The ptomaines have been found in canned meats. They are produced by putrefactive changes that take place in the meat before being canned, or may be developed in the can if it be imperfectly canned; or they may be formed after *opening* the can and exposing the contents to the atmosphere.

Lengthened putrefaction destroys the ptomaines. Brieger, in his great work on "Ptomaines," gives the results of his investigations:

1st. The ptomaines of gastric fibrin.

2d. The ptomaines from the putrefaction of albuminoids.

3d. The ptomaines from the putrefaction of mammalian flesh.

4th. The ptomaines from the putrefaction of fish.

5th. The ptomaines from the putrefaction of cheese.

6th. The ptomaines from the putrefaction of gelatine.

7th. The ptomaines from the putrefaction of yeast.

He also gives a full description of his chemical results and physiological experiments. The following are the names and chemical composition of the ptomaines examined by him:

A. Peptonized Fibrin.—A toxic substance was obtained from this called *peptotoxine*. Its chemical formula was not discovered.

B. Albumoids.—The same substance was discovered during the putrefaction of albumonids.

C. Putrid Mammalian Flesh gave two ptomaines. Neuridine ($C_5H_{14}O_2$), and neurine ($C_5H_{13}NO$), both of which are crystallizable and form salts.

D. Putrid Fish, from which five ptomaines were obtained:

1. Neuridine.
2. Ethylene diamine. $C_2H_4(NH_2)_2H_2O$
3. Muscarine. $C_5H_{15}NO_3$
4. Gadinine. $C_7H_{17}NO_2$
5. Triethy-amine. $N(CH_3)_3$

E. Putrid Cheese.—This yields the following bases:

1. Neuridine.
2. Trimethylamine.

F. Putrid Gelatine gives three ptomaines:

1. Neuridine.
2. Dimethylamine. $(CH_3)_2HN$.
3. Isophenylethylamine. $C_8H_{11}N$ (but not well established.)

G. Putrid Yeast yielded dimethylamine.

But few of the alkaloids and extractive matters formed by the decomposition of vegetable matter have been examined, but they are known to exist and to be very poisonous.

The symptoms of poisoning arising from eating canned foods are identical with those produced by putrefactive alkaloids and extractive matters. When sudden illness takes place after eating canned food it is usually attributed to metallic poisoning.

In a paper read before the Medico-Legal Society of New York, April 9, 1884, and published in the *Medico-Legal Journal* of June, 1884, Dr. J. G. Johnson reports six cases of poisoning from eating canned tomatoes. He attempts to prove that in these and all other cases of poisoning from canned goods, the poisoning comes from the metals, losing sight altogether of the possibility of poisoning by putrefactive alkaloids or extractive matter. He says: "Even if the tomatoes had begun to spoil she (the housewife) had cooked them, and cooking would have cured them. Putrefaction and decay, instead of being death, is really giving birth to myriads of little living plants. Now heat kills all of these ferments, and if the food had commenced to decay heating would have removed that danger." He does not even mention the possibility of artificial alkaloids or extractive matter. With many others, he seems to be under the impression that the toxic symptoms must necessarily be caused by a metal or a microbe. Now, heating to the boiling point, 212° F., will destroy all organic germs, but not all the alkaloids. It is no wonder that Dr. Stevenson, of London, in speaking of Dr. Johnson's paper, says: "Dr. Johnson arrives at very positive conclusions on altogether insufficient data, and he has failed to grasp the chemistry of the subject on which he writes."

When a number of persons are taken sick after eating foods that have not been canned, the food is analyzed for the purpose of ascertaining what poison has been introduced into the food by some malicious person. Failing to find metals or natural alkaloids, the case is reported as one of mysterious poisoning Cases of this class are reported nearly every day by the public press. Poisoning of wedding and other parties from eating ice cream, made in old freezers

with portions of putrid milk adhering to the creases and corners of said freezers, are known to all of us.

On May 5, 1884, Professor Attfield, of England, read a paper before the Pharmaceutical Society, detailing a large number of analyses of sixteen varieties of foods, in which he arrives at the following conclusions: "The public has not the very faintest cause for alarm respecting the occurrence of tin, lead, or other metal in canned goods."

Dr. Thos. Stevenson, Government Toxicological Analyst, London, in an article on "Poisoning by Canned Foods," read before the Medico-Legal Society of New York, on November 19, 1884, says: "Acute metallic poisoning by canned provisions is not known to have certainly occurred in this country. I have been Government Toxicological Analyst for thirteen years, and have never met with acute metallic poisoning by canned foods."

In conclusion, if care is used in canning foods, and they are not allowed to decompose before or after canning, they will not give rise to acute poisoning.

HÆMATEMESIS.[1]

BY SAMUEL S. ADAMS, M.D.,
OF WASHINGTON, D. C.

In offering for your consideration a case of hæmatemesis, I have nothing unique to present, nor is there anything new in its pathology or morbid anatomy. The interest in the case is mostly centred in the rapidity with which the bleeding stopped after the administration of the hæmostatic, and the speedy reaction from impending collapse.

Miss O'K., aged about 26, a brunette, of Irish parentage, with an excellent physique and high color, was taken ill October 31, 1886, but did not have any medical advice until I was summoned to see her just after a profuse bloody vomit on the evening of November 1. Her family history does not point directly to a hæmorrhagic diathesis, although some years ago, in the case of a sister, I had great difficulty in controlling a profuse and alarming hæmorrhage from the gums, following the extraction of a tooth, which had continued forty-eight hours. Her mother died of consumption; her father is said to have died of Bright's disease; and a brother of apoplexy following yellow fever.

From her infancy she had always been considered delicate, but cannot recall any sickness until 1881, when she was taken ill just as in the present attack. She had apparently been well and was engaged in household duties when she was suddenly nauseated, and soon after vomited a large quantity of blood; she vomited blood a second time that day. During this illness she was confined to her bed for one week, but did not regain her strength and vigor for several months. From her recovery to the present she had enjoyed excellent health, with occasional slight attacks of indigestion. She began to menstruate quite early; the periods and flows have always been normal, and she has never had any uterine disease. She has no history of vicarious menstruation; she has had teeth extracted without excessive bleeding, and she has never had nose-bleed.

Only words of commendation can be spoken of her ambition and industry, which have led her into irregular habits of living and to an almost absolute disregard of the rules for the preservation of health. It has been her custom to sit up until 1 or 2 o'clock at night engaged either in reading or fancy work. She would go to her office after taking a cup of coffee, and never more than one biscuit. She has been compelled to sit all day on the ground floor of the worst ventilated of the Government buildings writing letters. In the half-hour allowed her at noon she would hurry home, eat a very small luncheon, and frequently run back to her desk. She would dine at 6 P.M., when she usually ate a hearty but not an excessive meal. Her bright color, powers of endurance, cheerful disposition and apparent good health have excited the admiration and envy of her female friends. Whenever they would admonish her for disregarding the hygiene of life, she would reply that she was always well. On one occasion when she was boasting of her good health in spite of her irregular mode of living, the writer warned her that nature would not always be so obedient to her wishes, but would ere long assert her rights. Little did he think then that the prediction would be fulfilled so soon.

For a few days she had had "sour stomach," belching, suffocative feelings, pain in the back of the head and in the cardiac region which almost made her faint, and was very sleepy most of the time—all of which she attributed to "dyspepsia and biliousness." On October 30, after taking her usual breakfast, she went to a studio where she painted for seven hours. She returned late in the afternoon feeling very tired, but ate a good dinner and then repaired to her room, but did not retire till after midnight.

October 31. She did not get up until 10 A.M., when she felt very uncomfortable from a feeling of oppression in the epigastrium which she thought was indigestion. At breakfast she only drank a cup of coffee. She remained in the parlor till 1 P.M.; then went upstairs and took a warm bath and dressed for dinner. She now felt very weak, but thought it was from hunger, as she had not had a bit of solid food for twenty-two hours. While seated at the dinner table waiting for her soup she was seized with a feeling of suffocation, nausea and dizziness. She left the room and went into the parlor to her sisters. They, supposing that she was about to faint, procured some hot water, which she drank. In about ten minutes she became very much nauseated. She went up to the third story of the house, where she vomited seemingly a pint of blood. This frightened her, but she was quieted by her sisters, who expressed the opinion that the blood was from the nose, as it came from that passage as well as from the mouth in the effort of vomiting. She then went to her room and rested till 6 o'clock, when she felt somewhat better; she would have kept to her bed but for the solicitations of one of her sisters, who was anxious to see her in a new dress; so she put it on and went to tea, but could not eat. She remained in the parlor until

[1] Read before the Medical Society of the District of Columbia, November 10, 1886.

8, when she went to the fourth floor; soon after she was taken sick again with oppression, nausea, and cold clammy sweats, but did not vomit. She then went up another flight of stairs to her room, went to bed, and slept well all night.

November 1. She tried to get up at 10, and again at 12 o'clock, but could not dress on account of an indescribable feeling of weakness and faintness. Later in the day she tried to dress several times, but failed. At noon she was served with toast and tea, but partook sparingly of them. The nausea having returned every time she raised her head from the pillow, she was convinced by her sisters that she was "bilious," so she took a wineglassful of Hunjadi water, which operated very freely about 5 o'clock. Just after the stool, while combing her hair, she again vomited blood. She then walked down a flight of stairs to send a message to me, and back again. She "thought she would die" before she could get into bed again.

I found the patient ashy pale and sweating profusely; her voice was scarcely audible; her pulse about 140, small and compressible; respirations sighing, and she complained of a suffocated feeling. In the "slop-jar" I found at least a pint of dark blood which had not coagulated. She said that from the appearance of the stool it also contained blood. There was no acute pain, but she felt exhausted. She had no cough, and insisted that the blood was vomited. I auscultated the chest thoroughly, but found the normal vesicular murmur. My attention was called to a dull, gnawing pain just under the ensiform cartilage which was not increased by pressure. I was now satisfied that the blood came from the stomach, but the nature of the lesion was in doubt. There seemed to be no hæmorrhage from any other viscus, and as the intervals between the vomitings were so long, I felt certain that I had a simple ulcer of the stomach to treat.

The patient reacted so promptly that stimulants were not indicated. I ordered a mixture containing gallic acid, fld. ext. ergot, aromat. sulphur acid, syrup and aqua to be taken every two hours. Rest in the recumbent posture was strictly enjoined; cracked ice *ad libitum* allowed, and milk and lime water in small quantities, frequently repeated, were ordered.

9 P.M. I found the patient recovering from an attack of hæmatemesis. Her condition was described to me by her attendants about as I have detailed above. She had vomited more than a half pint of blood, which was less disorganized than that previously seen, This attack was induced by getting up to stool. This evacuation also looked as if it contained blood.

November 2, 3 A.M. I was called to see her because she had vomited blood again. She had slept very quietly since about 10 o'clock, but by getting up to use the *commode* she had brought on another attack. The quantity this time was fully a pint; the blood was more disorganized than the preceding, but did not coagulate. Her general condition was about as that described in the previous attacks. By the time I reached the house the syncope had passed away.

Early the previous night, when speaking to Dr. Busey about the case, he had advised the administration of the tinct. ferri chloridi if the medicine she was then taking did not control the hæmorrhage. In recommending this drug he remarked: "If it is given immediately after the vomiting I have never seen the hæmorrhage recur." In accordance with his suggestion the drug was procured in about an hour after the vomiting, and a half teaspoonful, in water, was then administered. She was instructed to remain in bed in the recumbent posture and, if necessary, to use the bed-pan. The cracked ice was continued; 20 drops of the iron to be given every two hours, and in case the hæmatemesis recurred, a half teaspoonful immediately thereafter.

8 A.M. The patient slept quietly until 6 o'clock, when she again vomited about a pint and a half of partly coagulated blood. Just as soon as the nausea had passed away a half drachm of the iron was administered. From that time there has been no evidence of hæmorrhage.

10 A.M. Dr. Busey saw the patient with me, and emphasized the importance of absolute rest and quiet, recumbency, milk and lime-water, cracked ice and small doses of iron, or in case of hæmatemesis the larger dose—the directions that had already been given. The iron was continued for several days in 20-drop doses every three or four hours, and then stopped. The patient gained strength and color very quickly; was permitted to sit up on the 8th, and was given soft bread and the juice of tender broiled steak.

The etiological factors in this case correspond with those laid down by Dr. W. H. Welch.[1] The irregular mode of living; the insufficiency of food; the exposure to bad hygienic surroundings; and the overtaxing both of body and mind, undoubtedly favored the ulcerative process. The present attack of hæmatemesis, it seems reasonable to suppose, had its exciting cause in the great mental and physical strain to which she had been subjected during the twenty-four hours preceding the first vomiting.

From the previous history; the chronic dyspepsia; the localized pain after eating; the age and sex; the bloody stools; the oppression and nausea; and finally the vomiting of blood—which recurred at varying intervals—surely make the diagnosis simple.

The prognosis was favorable during the illness because the patient rallied so quickly after each hæmatemesis, without the use of stimulants or external heat. If, however, the prognosis had been based on the loss of blood instead of on her powers of recuperation, it would have been very unfavorable. Still another element in the favorable prognosis was the prompt action of the iron in checking the hæmorrhage.

In the treatment of the case there is much to be gained. The mixture that was given at first apparently had no effect in controlling the hæmorrhage, but its failure may have been due to the patient getting out of bed to use the *commode*. When the iron was begun early in the morning an hour had passed since the patient vomited, and undoubtedly some blood had effused into the stomach, thus pre-

[1] System of Medicine, Pepper, vol. ii, p. 480.

venting its speedy action. After she had vomited the last time, at 6 A.M. November 2, Dr. Busey's advice "to give the iron immediately after the vomiting" was carried out, and his prediction that the hæmorrhage would be arrested was fulfilled. This method of treatment seems to have originated with Dr. Busey, as the books I have examined make no reference to it.

It is important to state that, although the patient took about a quart of milk daily, her bowels were not moved from the night of the 1st until that of the 7th. Enemata of warm water were given for several days, but they were either voided immediately without fæcal matter or else absorbed by the intestinal mucous membrane. The iron is very apt to form scybala and thereby prove a troublesome complication. So long as the tongue is clean and the patient is not inconvenienced by the constipation it is better not to force an action for several days. When the necessity of opening the bowels becomes imperative, great care should be taken to avoid nauseating and drastic cathartics, in order to prevent violent peristaltic action of the alimentary tract. Saline cathartics are the indicated agents in such cases. This patient took on the 7th magnesium sulphate dissolved in aromatic sulphuric acid, syrup and water, which had the effect of clearing the tract by three profuse, watery stools, without exhausting or injuring her.

In conclusion, it is but just to say that the success of the treatment was materially aided by the obedience of the patient and the good judgment and excellent care of her lady friends, who were untiring in their attentions.[2]

1525 I St., Washington, D. C.

EXPLORATORY INCISION AS A DERNIER RESSORT FOR DIAGNOSTIC PURPOSES.[1]

BY R. STANSBURY SUTTON, M.D.,

OF PITTSBURGH, PA.

Many cases will present themselves in which a diagnosis is not possible. It will not be possible to determine anything beyond a certainty that the disease is within the abdominal or pelvic cavity. A tumor may be present; no certainty of its relations may be ascertainable through the closed abdominal wall. What is to be done? Will we satisfy our consciences that our duty is done and turn away, or temporize with drugs? It is to be hoped not. *In every man or woman dying or in danger of dying from an obscure intra abdominal trouble an exploratory incision should be made and the diagnosis should, if possible, through it, by touch, or touch and vision, be perfected.* Is such a procedure to be lightly undertaken? By no means. But with the following precautions it is safe:

1. Have the patient clean from head to foot, and the surface of the abdomen especially clean, made so by soap and water and a brush. Surround the parts with clean towels fresh from the hot iron.

2. Have your hands and forearms scrupulously cleansed with soap and water and turpentine.

3. Have your instruments clean and immersed in hot water.

4. Thoroughly etherize your patient.

5. Make an incision two inches long; before opening the peritoneum secure every bleeding vessel. Pass in two fingers and make search.

6. If you have failed to gain the desired information, withdraw your fingers, pass in a sponge, locate it directly under, below and above the wound, and enlarge the latter with a clean cut over the sponge, to a length sufficient to let in your hand. Secure all bleeding vessels, withdraw the sponge, and pass in the hand and complete the search. Through such a wound much may also be seen. *Never make a longer cut than is necessary, and make a clean cut.*

7. Before closing the abdomen cleanse the cavity thoroughly, but be gentle in your use of the sponges; if you deem it necessary, pour in a pitcher of clean warm water and wash the cavity out. Gently sponge it dry. In closing the wound, pass the sutures over a flat sponge laid beneath the wound.

8. Reject the use of carbolic acid or bichloride of mercury in your operations; they are useless *and a source of danger.* They may be useful in cleansing your hands prior to operating, *but they are to be kept out of the peritoneal sac.* Keith, Tait, Bantock, and others abroad have proved the worthlessness of carbolic acid, and I have for some time been satisfied from experience that they are right.

9. Never permit any one but the operator to pass a hand into the cavity, unless his hand has been prepared by a careful cleansing with soap and water and brush, and with turpentine or a 1.200 solution of bichloride of mercury. Even a 1 in 20 per cent. solution of carbolic acid is not reliable for this purpose.

10. In tying the sutures, dry the lips of the wound as you go along with a bit of iodoform gauze.

With the above precautions I have opened the abdomen many times, and I have yet to see a single wound so treated fail to unite by first intention.

[2] November 24. The patient is steadily improving, and has resumed her official duties.

[1] Remarks made before the Pittsburgh Gynecological Society, December 2, 1886.

HOSPITAL REPORTS.

MERCY HOSPITAL CLINIC.

Service of DRS. EDMUND ANDREWS AND E. WYLLYS ANDREWS.

A BULLET AND FRAGMENTS OF A KNIFE IMBEDDED TWENTY-TWO YEARS IN THE PERINEUM.

Case 12,710 Andrews' Surgical Record.—This patient was a pontonier under Gen. Sherman in the Atlanta campaign in the spring of 1864. At the battle of Resaca he was on duty as steersman to one of the pontoons used in ferrying troops across a river. A shot from the enemy's side struck him in the right groin, passing through the pocket of his pantaloons, shattering a bone-handle pocket knife, and entering the body about where the femoral vein emerges from beneath Poupart's ligament. Thence it traversed inward, backward, and slightly down-

ward, crossing the perineum, cutting the urethra behind the scrotum, and lodging alongside the tuberosity of the ischium. The man being plucky, continued for a time to steer his pontoon, but the blood flowed so freely that he became faint, and was put ashore, where he lay behind a stump until a lull in the firing permitted his removal to the field depot. He was also wounded in the forearm.

The surgeon in charge of his case failed to discover the bullet, owing to its peculiar location, and dressed the wound as usual. Urinary infiltration and abscess of the perineum followed, which gradually healed, as also did the original wounds in the groin and arm. From that time on there was a constant flow of pus with the urine. Eight years later he passed from the urethra some pieces of the bone handle of his pocket knife, without any material benefit.

Twenty-two and a half years after the battle he appeared at the clinic, much weakened and exhausted, still discharging pus freely from the urethra, and suffering from a stricture of the wounded urinary passage. Examination with sounds showed that instruments turned off from the urethra to the left and ran into a cavity alongside the ischium, where a gritty sensation was felt. There was also a hardness and a tenderness to the touch in the same region.

On making an external perineal section behind the scrotum four pieces of the bone handle of his pocket knife were found, partly covered with a strong crust deposited from the urine. A small orifice ran downward from the main abscess cavity to a pocket nearer the surface, where a hard object could be felt. A separate incision opened this pocket and disclosed the bullet. On extraction, it was found to be an old-fashioned spherical bullet, somewhat battered by its tussle with the pocket knife, and crusted in spots with urinary calculus. The abscess was disinfected and tubed, and the stricture of the urethra opened out to full size. The wounds are now healed and the patient is rapidly returning to full health.

MEDICAL PROGRESS.

BIOLOGO-CHEMICAL PROPERTIES OF MICROBES.—At a recent meeting of the Russian Chemical Society in St. Petersburg, PROFESSOR A. V. POEHL (*Vratch*, No. 8, 1886, p. 157) made a very interesting communication on his experimental study of the vital process of various microbes. The formation of ptomaines in nature, he says, is mostly caused by the vital action of micro-organisms. While studying the microbes of human fæces, the author found that in morbid cases there appear in the intestines several kinds of microbes, possessing the property of decomposing proteid bodies. To use Hoppe-Seyler's words, the decomposing action of bacteria on proteids resembles that of caustic alkalies (while ferments act on proteids like weak acids). Under the splitting action both of bacteria and caustic alkalies, there simultaneously appear the products of oxydation and those of reduction, which fact is explained by decomposition of water (H_2O) into an oxydizing hydroxyl (HO) and a reducing hydrogen (H).

Ptomaines belong to the products of disoxydation. Dr. Poehl succeeded in demonstrating the reducing action of certain micro-organisms on the surrounding nutritive medium during their growth. He recommends taking a neutral nutritive jelly, to which is added 0.05 per cent. of perchloride of iron and 0.05 per cent. of red blood salt (ferric potassium cyanate). Micro organisms endowed with a reducing power give rise to a blue coloration of the jelly (in consequence of formation of Berlin blue), which commences in the lowest part of the track left by an inoculating needle, but subsequently spreads around in the jelly (since ptomaines, on their being absorbed by the jelly, also deoxydize the latter).

Dr. Poehl examined in that way cholera bacilli brought by Professor Raptchevsky from Spain, typhoid-bacilli, Finkler's and Prior's bacilli, certain microbes of pus and fæces, as well as microbes of water from the Neva. A quite distinct reduction was obtained from the cholera-bacillus, typhoid bacillus, some of the microbes of pus, fæces, and the Neva water, and from "Bienstock's Bacterium," No. 4. But Finkler's and Prior's microbe of cholera nostras gave no reduction, since it does not produce ptomaines (though it freely peptonizes syntonine). Hence the author proposes to use that biologo-chemical behavior as a means of distinguishing between Koch's microbe of Asiatic cholera and Finkler-Prior's bacillus of European. As a rule, micro-organisms liquefying (under ordinary conditions) nutritive jelly do not possess either a reducing power or a power of forming any ptomaines. When present in the intestines, the cholera-bacillus also produces a reducing action on the surrounding medium and leads to the formation of ptomaines (the presence of which in cholera cases has been actually proved by Klebs, Pouchet, Nicati and Rietsch, etc.). The author feels sure that cholera could be usefully treated by the administration of oxydizing remedies, such as chlorinated water, peroxide of hydrogen, salts of permanganic acid, etc.; they are indicated the more strongly, since most of ptomaines are destroyed by the action of oxydizing agents. [Referring to the therapeutic dictum of Professor Poehl, Professor Manassein expresses his doubt that chlorinated water and peroxide of hydrogen, taken internally, could reach the intestines undecomposed.—*Rep.*]—*London Medical Record*, Dec. 15, 1886.

GENKIN ON THE USE OF HYPNOTICS.—DR. M. S. GENKIN, of Kaluga, lays down (*Proceedings of the Kaluga Medical Society*, Nov. 30, 1885, p. 42) the following rules for the use of various hypnotics in treatment of sleeplessness:

1. *Sleeplessness from physical excitement of the brain, or so-called "physical hyperæsthesia from moral causes."*—As a rule, the removal of causal influences and the administration of bromide of potassium prove successful. When the bromide remains inactive, morphine must be given to an anæmic

patient, and ether, chloral, or paraldehyde to a strong one. In the latter, morphia is contra-indicated, since it would only increase "psychical hyperæsthesia" in him, and may even give rise to acute delirium.

2. *Sleeplessness from pain sensations in peripheral nerves.*—Remove the cause; when the latter is unremovable, the best means is a hypodermic injection of morphia.

3. *Sleeplessness from the rise of temperature and cerebral hyperæmia in febrile cases.*—The best treatment consists in giving paraldehyde, in the dose of from 20 to 40 grains. The latter quantity of the drug induces quiet sleep of from four to six hours' duration. Dr. Genkin, generally, thinks highly of paraldehyde, which, according to his extensive trial, is as effective as chloral, and does not produce any unfavorable influence on the heart. In the first period of febrile diseases—that is, before high temperature has produced fatty degeneration of the cardiac muscle and blood vessels, chloral also may be used.

4. *Sleeplessness from cerebral congestion, depending upon an irregular cardiac action in cases of fatty degeneration, or organic defects of the heart, arterio-sclerosis, etc.*—Paraldehyde should be given. Chloral is strongly contra-indicated even in small doses. Preparations of opium and morphine are also out of place.

5. *Sleeplessness from intense anæmia of the brain.*—Subcutaneous injection of morphine, or aqueous extract of opium, a glassful of wine or beer or aquavitæ *(vodka)* internally, and warm applications to the head, are the best means in the form of insomnia in question. Chloral and paraldehyde remain here entirely inactive.

5. *Sleeplessness from alcoholism.*—In absence of arterio-sclerosis, etc., the best remedy is chloral. Otherwise paraldehyde should be administered. Dr. Genkin emphatically advises the utmost caution and discretion in the administration of hypnotics, since sometimes even relatively small doses of an unduly used drug of the kind may produce disastrous effects. For the sake of illustration, he adduces two instances of the use of chloral in patients with arterio-sclerosis. In one of them, two 15-grain doses were given, one at bed-time, another at noon on the next day. In the evening, after the second dose, the patient suddenly died from paralysis of the heart. Another patient self-administered three 10-grain doses of the drug, at three hours' intervals, and made only a narrow escape. According to the author, chloral and bromide of potassium are used in Russia in truly enormous quantities. Indeed, "bromide of potassium has become almost a food-article in every Russian home."—*London Medical Record*, Dec. 15, 1886.

Fracture of the Thigh—Absorption of the Callus from Erysipelas.—Dr. Ferret reports the case of a youth, aged 17 years, of good constitution, and without taint of disease, who came under observation in February, 1884, for simple fracture of the thigh at its middle. It was treated by continuous extension, and recovery ensued without shortening. In April, after consolidation was complete, the patient contracted erysipelas on a portion of the leg where the skin was abraded by the diachylon used. It rapidly invaded the whole limb, and was very severe. On the sixth day after the outbreak of the erysipelas it was noticed that the limb was bent almost at a right angle at the seat of the old fracture, but there was no pain. The limb was placed in good position, and extension again applied. Within ten days the erysipelas had disappeared; but the patient suffered deep pain at the site of the fracture. Four days after this the region was inflamed, swollen and fluctuating, and a considerable amount of pus was removed by aspiration. Pus reappeared, and four days after the aspiration the abscess was laid open. It was found that the extremity of the lower fragment was adherent to the internal face of the upper fragment. It was replaced, after about 4 cm. of bone were removed, and the suppurating cavity was then packed with iodoform gauzes. The extension apparatus was kept on, the iodoform gauze renewed every three or four days as long as necessary, and by the end of May bony union was again complete.

Cases of this kind are very rare, and may be classified as those in which the callus is only softened, and those in which it is completely absorbed. Of the first class Clarke reported a case in the *Medical Times* and *Gazette*, in 1867, and Poinsot reported a case to the Société de Chirurgie in 1878. Of the second class Norris ("Contributions to Practical Surgery") says that he has seen rapid absorption of a large callus under the influence of erysipelas. Schilling (*Med. Zeitung*, Sep., 1840) reports a case of absorption of callus during typhoid fever. Mantell reports in the *Lancet*, Oct. 9, 1841) a case in which a callus was absorbed at least three months after bony union from the patient contracting an epidemic fever.—*Progrès Médical*, Nov. 13, 1886.

A Modification of Weigert's Method of Staining Tissues of the Central Nervous System.—Dr. W. M. Gray, Microscopist, Army Medical Museum, Washington, D. C., says:

The specimens, hardened in Müller's or Erlicki's fluid, are transferred directly (without coming in contact with water) to alcohol 70 per cent. The pieces to be embedded are now gradually dehydrated, advancing from 70 per cent. to 95 per cent. alcohol, and finally to absolute. After soaking in absolute alcohol for several days, they are transferred to a mixture of equal parts of ether and absolute alcohol, and allowed to soak for one or two days; they are then transferred to a solution of celloidin, and are embedded in celloidin on cork. The pieces, fastened to a cork with celloidin, are immersed in a solution of neutral acetate of copper (a saturated filtered solution of this salt, diluted with an equal volume of water), and allowed to remain in an incubator at 30° or 40° C. for one or two days.

The specimens become pea green after the copper treatment, the celloidin mantle more of a blue-green; they may now be preserved in 80 per cent. alcohol indefinitely.

After having made the sections, which must still

be kept clear of water. they are immersed in the hæmatoxylin solution, the formula for which is as follows: hæmatoxylon (Merck's, in crystals), one part; absolute alcohol, ten parts; water, ninety parts; boil twenty minutes, cool and filter, and to each one hundred parts add one part of a cold saturated solution of lithium carbonate.

The time required for staining varies with different specimens; in general, the rule prevails that the longer one colors, the surer the result; for cord sections, two or three hours are usually sufficient; in brain sections, twenty four hours are required in order to color the very fine fibres of the cortex.

After staining, the sections, now black in color, are differentiated by immersion in the following solution: borax, two parts; ferricyanide of potassium (red prussiate), two and one-half parts; water, one hundred parts. It will be found that the time required for perfect differentiation varies in different specimens; in cord sections, it usually takes one-half hour to several hours before the desired contrast between white and gray matter is obtained, and in brain sections it is longer. No fear of spoiling the sections need be felt. I have frequently allowed sections to remain in this solution for twelve hours without ill result.

From this solution the sections are transferred to water and well washed; then to 80 per cent. or 90 per cent. alcohol; they are then spread on slides and dehydrated thoroughly with absolute alcohol, and then clarified. I prefer xylol or creasote for clarifying, and xylol or benzole balsam for mounting.

If the steps in this method are carefully followed, success is certain; and it is without exception the method for tracing nerve fibres or demonstrating nerve lesions.—*Medical News*, Nov. 6, 1886.

LYCOPUS VIRGINICUS IN THE TREATMENT OF VENOMOUS BITES AND STINGS.—DR. J. R. BRIGGS, of Ft. Worth, Texas (*Trans. of the Texas State Med. Assoc.*, 1886), calls attention to the efficiency of *Lycopus virginicus*, commonly called bugle-weed (the charmweed of the Indians), in the treatment of the effects of the bites and stings of venomous reptiles and insects. "Any one," he says, "who has attended the fairs and other gatherings held throughout Georgia, Tennessee, and Kentucky during the egress of the Indians from that country doubtless remembers that on such occasions there were many Indians who would, with impunity, allow the poisonous rattlesnake to bite them. It was observed that, in order to counteract the effects of this poisonous reptile, they masticated large quantities of the bugle-weed and swallowed the juice. That the bugle-weed was the identical weed used at the time, I have absolute proof." He then gives a brief account of the case of a man who was suffering severely from the effects of the sting of a large centipede. Ordinary stimulants, such as whisky and ammonia, having produced no perceptible results, Dr. Briggs gave a decoction of bugle-weed (made with an ounce of the plant to a pint of water, a small quantity of alcohol being added to preserve it) in tablespoonful doses every hour, and applied it on linen cloths to the trail of the insect on the patient's abdomen, extending from the crest of the ilium to the umbilicus, an inch wide, of an erysipelatous redness at first, afterward black, roughened, and elevated. The man became comfortable in four hours, and was able to attend to his business at the end of three days.—*N. Y. Medical Journal*, Dec. 4, 1886.

EGGS IN THE DIETARY IN BRIGHT'S DISEASE.—In order to solve the problem of alimentation in the subjects of Bright's disease, LÖWENMEYER placed a number of patients upon a regimen which was as regular as possible, and added to the diet-list from six to nine eggs a day. In four of the patients, of whom three suffered from amyloid kidney and one from nephritis consecutive to cardiac disease, the addition of eggs to the dietary was followed by no increase in the excretion of albumen in the urine. In three others there was a notable increase; but the experimenter excluded two of them, one because the patient was not carefully watched, and the other because menstruation occurred just after the beginning of the experiment. In the third case, one of interstitial nephritis, the author remarks that the increase in albumen might be accounted for by the fact that the patient took the eggs raw, while the others ate them cooked. He concludes, as a result of these experiments, that an alimentation even very rich in albumenoid matters causes no increase in the amount of albumen in the urine.—*Lyon Médical*, No. 36, 1886.—*Medical Record*, Dec. 11, 1886.

RHUBARB IN THE TREATMENT OF THREAD-WORMS. DR. SIDNEY MARTIN, (*Practitioner*, October, 1886), thinks that in many cases, although the irritation about the anus may have been relieved by injections, the persistent irregularity of the bowels and disturbance of sleep are owing to the fact that worms still remain in a higher part of the intestine. In such cases he has found that small doses of rhubarb are efficient in bringing the worms away and in regulating the bowels, so that in most instances injections may be dispensed with. He has found the following formula most useful, varied slightly according to the age of the child:

Tincture of rhubarb	3 mmims;
Magnesium carbonate	3 grains;
Tincture of ginger	1 minim;
Water	to 1 drachm.

This amount is to be taken two or three times a day, according to the effect on the bowels. Whether the rhubarb acts as a vermicide or simply by "moving the worms on," he is unable to say.—*N. Y. Med. Jour.*, Oct. 30, 1886.

COCAINE IN MERCURIAL STOMATITIS.—BOCKHART has found that painting the gums with a 5 to 10 per cent. solution of cocaine a few minutes before eating will enable the patient to eat without trouble or pain. —*Revue des Sciences Méd.*, July, 1886.

CHRYSAROBIN IN INFANTILE ECZEMA.—STAQUART reports that in doses of 5 millig. to 2 centig. in young children, and 4 centig in children 7 years old, chrysarobin causes rapid dessication of the inflammatory redness.—*Revue des Sc. Médicales*, T. 38, No. 1.

THE
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PUBLISHED WEEKLY.

The Editor of this Journal would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, JANUARY 8, 1887.

THE SURGERY OF THE PANCREAS.

The most important surgical paper of last year, in this country at least, was read by Dr. Nicholas Senn, of Milwaukee, before the American Surgical Association at its last annual meeting, and has now been issued as a reprint from the *Transactions* of the Association. Those who are familiar with former papers of Dr. Senn, with the records of his careful experiments, and with his lucid style, need not be told more as to the importance of the paper. But whether our readers be or be not familiar with his writings, they will at once recognize that a carefully written paper of 129 octavo pages on the surgery of the pancreas must contain much valuable material, and positive additions to our knowledge of this very obscure subject. The surgery of the pancreas has no history except as to the treatment of a few cases of cysts of the gland, but the results in these cases have been so encouraging that there is much hope for the future of the surgery of the organ.

The experiments of Dr. Senn as to complete section of the pancreas tend to show that this lesion, unless complicated by other and more serious lesions, is not dangerous to life if the chief source of danger, hæmorrhage, be properly treated. "The coaptation of the divided ends would be desirable, but is not essential, as the continuity of the duct is not restored after this injury." No disturbance of digestion was noted in either of the two experimental cases, since a sufficient amount of pancreatic juice was secreted from that portion of the organ in communication with the intestine. In case of this injury the most important indication is to arrest bleeding, and to suture the two cut ends of organ so as to keep them in place, and thus maintain normal blood-supply. In an experiment with regard to the effect of laceration of the pancreas death resulted from the accidental re-opening of the abdominal wound. "Hæmorrhage was arrested spontaneously, and the process of repair, so far as the wound in the pancreas was concerned, appeared to be satisfactory. The divided ends were displaced considerably immediately after the laceration, but were subsequently brought into close contact by the cicatricial contraction." Believing that putrefaction cannot occur without specific germs, Dr. Senn crushed the pancreas of a cat to the extent of two inches in order to test the matter. The animal lived until it was killed, on the eighty-sixth day. It was found that the crushed portion was removed by absorption, which seems to be very rapid in this locality, and which may be explained by assuming that the peritoneum takes an active part in the process. No infection took place, nor could any evidence of putrefaction be found. "Subsequent degeneration, atrophy and sclerosis, take place in that portion of the gland which is no longer connected with the intestine by a permeable duct."

It was found that complete extirpation of the pancreas is invariably fatal, though Schiff has asserted the contrary; and it is important to know that in the two specimens from experiments which showed evidence of gangrene, this was seen on the convex surface of the bowel, but did not in either case involve the entire diameter of the intestine. Surgically speaking, partial extirpation of the pancreas is less serious than complete removal, though physiologically the consequences may be the same if the portion removed embrace the common duct or the two principal ducts from the two portions of the gland. In all of Dr. Senn's experiments the common duct was removed with the excised portion, and thus left the animal, physiologically, without a pancreas. In two cases the animals lived long enough to show the influence of the pancreatic juice upon digestion and assimilation. In each of these animals "the general health and nutrition remained unimpaired for four weeks, when emaciation, with fatty stools, followed, which resulted in death from marasmus in, after seventy days, and reduced the second to a skeleton in 126 days." As from the beginning no pancreatic juice passed into the intestine it is difficult to account for the good condition of the animals for the first four weeks. Had the marasmus been due to the resection of the mesentery of the duodenum, by diminution of intestinal absorption, it should have begun earlier. We may assume that the pancreatic tissue left continued to secrete until it was incapacitated by

degenerative changes; and with this assumption we must believe that the pancreas could absorb its secretion, and that this, entering the circulation, must have had some influence upon digestion. It is also important to know that in one case almost the whole duodenum was suddenly deprived of its blood-supply, and yet gangrene did not occur, as collateral circulation was set up by the development of two vessels in a band of cicatricial tissue along the concave surface of the bowel.

Seventeen experiments were made to prove the feasibility of ligation of either portion of the pancreas near the common duct as a surgical measure, and the regularity with which the pancreatic tissue is removed by degeneration and absorption of the detached portion of the gland. The ligatures used were of rubber. In every case in which complete physiological detachment was produced by the ligatures, resection, crushing, or any other means, atrophy followed. In no case was anything like a cyst produced. The facts of this atrophy and the non-formation of cysts shows that "in operations upon the pancreas it is not essential or necessary to remove peripheral portions of the gland, for fear that if any of the parenchymatous structure should remain a retention cyst would follow. In partial resection for injury or disease it would be advisable to ligate the peripheral portion, and permit it to remain, as it would lessen the danger by the infliction of less traumatism, and we can confidently expect that it will be removed in a short time by absorption." So also the important pathological question of retention cysts is settled by the experiments; such cysts cannot be due to obstruction of the duct. Again, we are taught the importance of removing those portions of the organ which are not supplied with blood-vessels rather than to trust to absorption, as dead pancreatic tissue is very putrescible.

Experiments were made for the purpose of studying detached portions of the pancreas, and the method of operating in these cases is worthy of the attention of physiologists, though it need not be detailed here. The experiments showed conclusively that when a portion of the pancreas is separated secretion continues until complete degeneration and absorption have caused the disappearance of the parenchyma. "That the atrophy in the part of the organ which has been detached from its connections with the intestine is not due to a traumatic interstitial pancreatitis is proved by the normal appearance and structure of the remaining portion of the gland which has retained its anatomical and physiological relations to the intestine:" which again supports the author's view that physiological detachment of any portion of the pancreas is invariably followed by degeneration and complete atrophy, consequently also by complete cessation of functional activity. Eleven experiments were made for the purpose of determining the action of the pancreatic juice on the peritoneum. In only two of the cases was death caused by purulent peritonitis, and the results justify the conclusion that normal pancreatic juice does not cause peritonitis when brought into contact with the peritoneum; and the further conclusion that such juice is absorbed. The duodenum in these cases was denuded of its mesentery, and thus of its vascular supply, for from one to three inches, but no gangrene occurred. One experiment showed that even if no pancreatic juice be produced, digestion may remain good; and the ligation experiments show that the introduction of normal pancreatic juice into the circulation is not harmful, and may be tolerated for two or three weeks without bad consequences.

It has already been seen that crushing and laceration of the pancreas are not of themselves necessarily fatal; and if, during an exploration for abdominal injuries, this organ be found extensively crushed, "it would be good surgery to remove the crushed portion after preliminary ligation of the organ on each side of the comminuted portion. Ligation of the pancreas can be safely none with a single catgut or silk ligature, as the friable texture of the organ will permit of burying the ligature deeply." Crushed pancreatic tissue and pancreatic juice must be removed to prevent traumatic infection. In a case of prolapse of the pancreas, if the prolapse be recent and there are no signs of inflammatory or other changes, it should be thoroughly disinfected and replaced with great gentleness; and if reduction be difficult the wound should be enlarged. Should the organ be in an inflammatory or gangrenous condition "the parts should be thoroughly disinfected and the organ pulled further into the wound until healthy tissue is reached, when a ligature is applied and the diseased portion removed with the knife or scissors. After thorough disinfection the stump is dropped into the abdominal cavity and the external wound closed. Thorough primary removal of infected tissue is the only safety against subsequent extension of the infection to the peritoneal cavity, and the only guarantee for primary union of the abdominal wound." Gangrene, one of the terminations of acute inflammation of the pancreas, may also be included among the diseases of the pancreas which may be treated by surgical measures; inasmuch as spontaneous recovery has followed

the elimination of the necrosed organ, it seems not unlikely that timely removal of the necrosed pancreas would add to the chances of recovery. It should not be forgotten that the pancreas may be a part of the intussusception in a case of invagination, and in abdominal section for the relief of this condition the pancreas should not be overlooked. In searching for the cause of this condition, or that of peritonitis, when it is found that the primary disease is located in or around the pancreas radical measures should be adopted when practicable. "Whenever the sac can be stitched to the external incision this should be done, and the sac opened, disinfected, and drained. Search should be made for the necrosed pancreas, and when found detached it should be removed. As in most of these cases the retroperitoneal tissue is extensively infiltrated, a counter-opening should be made in the lumbar region above the kidney, and thorough drainage established. If an anterior abdominal fistula cannot be established, the course to be pursued should be the same as in treating a pancreatic abscess under similar conditions."

In a subsequent issue we will notice that portion of this valuable paper which deals with other pathological conditions of the pancreas.

SOUR GRAPES.

The editor of the *Boston Medical and Surgical Journal*, in the number for December 30, 1886, devotes six pages to an enumeration of the more important events of a medical character during the year, in which is included one rather facetious paragraph concerning the International Medical Congress to be held in 1887. With characteristic unfairness he says: "For this reason, as well as in accordance with the territorial policy of the management, the *cities* of the *Atlantic coast* will have but a small representation in the *honors* of the Congress." Had our learned confrère taken the trouble to examine the list of general and executive American officers of the Congress, including the Vice-Presidents, and also the Presidents of the Sections, he would have found them to number thirty-three, twenty-one of whom are residents of the Atlantic States, and *seventeen* of the twenty-one are residents of the five Atlantic cities. Boston, New York, Philadelphia, Baltimore, and Washington; while only twelve of the thirty-three chief American officers are distributed to the great cities and universities of the vast country west of the Atlantic States. It is certainly amusing to see with what gravity our Boston annotator of medical events repeats the statement, originating with some mischievous wag, "that Dr. Pancoast, of Philadelphia, had personally invited the Queen of England to be present." Credulity and self-complacency are often coincident traits of the same mind.

International Medical Congress—Vacancies Filled.—J. J. Chisolm, M.D., of Baltimore, Md., has been appointed President of the Section of Ophthalmology of the Ninth International Medical Congress, in the place of Dr. E. Williams, who was compelled to resign on account of ill-health. Judson B. Andrews, M.D., Superintendent of the Hospital for the Insane, Buffalo, N. Y., has been appointed to the office of President of the Section of Psychological Medicine and Nervous Diseases, made vacant by the recent death of Dr. John P. Gray. These are excellent appointments, both parties being widely known and eminently well qualified for the respective positions assigned to them. No vacancies now remain in the list of chief officers of the Preliminary Organization of the Congress or of its Sections; and our information from all departments is of the most encouraging character.

Professor J. S. Jewell, Editor of the Neurological Review.—We much regret to learn that this eminent and most indefatigable worker continues to suffer so much from ill health, that he is constrained to give notice of an indefinite suspension of the publication of the *Review*. With a mental activity and erudition seldom equaled, he is compelled to yield to physical infirmities that would have long since overwhelmed any man of less tireless energy and steadfastness of purpose. We hope more rest, and perhaps a milder climate, may yet restore his physical health and endurance.

As Others See Us.—What is wanted in America, says the *Lancet*, is the establishment of some general principles of action rather than the intermittent and varying action of a number of separate States; and we entirely sympathize with the request which has gone forth from more than one State, that the general health defences of the country should be subject to some central organization.

Alumni Association of the Woman's Hospital in the State of New York.—The third meeting of this Association will be held at the New York Academy of Medicine, January 19, 1887. Important communications are announced from six or eight members.

SOCIETY PROCEEDINGS.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, November 19, 1886.

THE PRESIDENT, CHARLES WARRINGTON EARLE, M.D., IN THE CHAIR.

(*Concluded from page 25.*)

DR. W. W. JAGGARD read a paper entitled

A CASE OF CHRONIC INVERSION OF THE UTERUS, OF TWENTY-ONE MONTHS' STANDING, REDUCED BY COLPEURYSIS.

DR. PHILIP ADOLPHUS: The author of this excellent paper has adopted in the reposition of the uterus of his patient, as efficient a mode of procedure as any hitherto in use. It is also the safest mode of replacing the organ. In the treatment of chronic inversions, success has followed all methods of replacement, whether effected gradually or rapidly. But forcible taxis ought to be the last resource, when gentler and as sufficient means are exhausted. It may lead to laceration of the vagina, peritonitis and death. Gradual pressure, sustained or interrupted, solid or elastic, to which taxis has been added, has been equally successful, and has been practiced since 1858. It is absolutely safe. In some cases air pessaries or other elastic contrivances have been left in the vagina constantly, or have been replaced at intervals, for a period of three to eighteen days, and *uteri* have been returned by this method, which were inverted from one to fifteen years. The essential to success in the return of an inverted uterus is patient, gently continued manipulation of *some portion of the uterus*, by the fingers in the vagina with the application of the other hand externally to overcome the constriction of the cervix, and to prevent the forcible elongation of the vagina. A small hand, which observes the course of the pelvic axis, and avoids the promontory of the sacrum, and goes on one side of it, is also an element of success. Old adhesions opposing reduction of the inverted uterus are rarely present. An inflammation of the serous tissue in some portion of the pelvis may, however, be present as a complication, for this is an extremely common affection in all kinds of pelvic disease. Doubtless, in cases in which peritonitis followed manipulations, a chronic or subacute inflammation of the serous tissues was the predisposing cause. However, the most interesting portion of this subject to me is that of diagnosis, *in all tumors lying in the vagina*, which do not pathologically implicate that organ and the vulva.

A correct diagnosis in inversion of the uterus is absolutely essential to treatment, and the safety of the patient. The question of differential diagnosis between inversion of the uterus, and polypi and fibroids, is almost daily presented to the gynæcologist for solution. Not much reliance can be placed on the history in *chronic* inversion, for the diseases present similar symptoms. The size of an inverted uterus of some standing is scarcely larger, and is often smaller than in the natural state. It is desirable to look on the case under examination as one of inversion as long as any doubt exists. The bowels and the bladder should be emptied and the patient examined under ether. It is certainly *not* a case of inversion, when by bimanual *palpation*, with fingers in vagina, fingers or hand into the rectum, or sound in the the bladder, the *unimpaired roundness* of the uterus presents itself for palpation, either in the normal or retroverted position. In the just mentioned condition, if the sound enters the uterus two and one-half inches or more, the uterus merely contains a fibroid or polypus which emerges from the cervix. The diagnosis may be rendered more difficult if no opening in the *cervix uteri* can be found, the cavity having been agglutinated by previous inflammation, to the polypus. Here downward traction of the vaginal tumor to the vulva, by a vulsellum as recommended by Susdorff, and I copy his words, will at once confirm the presence of a polypus. "For the relations of the parts to each other as they existed in the vagina will be greatly changed when exposed to view. The lips of the cervix which surrounded the pedicle will have disappeared, having also become inverted, and along with it, probably, the vagina at its junction with the neck." The insinuation of the sound into the uterus will at once confirm the information procured by bimanual palpation. If the same manner of examination disclose the body of the uterus indented or cupped, we have a partial inversion, either with or without a fibroid, a condition which is not as unfrequent as is generally supposed. The presence of a tumor in the vagina, the absence of the *fundus uteri* in the abdomen, and the presence in its place of a well defined ring or cup-shaped cavity, unmistakingly announces an inversion of the uterus; traction confirms the diagnosis. An incision, not a puncture, along the sides of the tumor, after the patient emerges from the ether, will at once show whether we have to deal with the fundus of the organ or a polypus. In the one case it will induce pain, in the other it will prove painless. In the former it will relieve the congestion and possibly lead at once to its reposition, or prepare for its successful replacement in the future.

DR. H. P. MERRIMAN: I would like to ask whether, after the uterus had been partially restored so that the fundus was on a level with the lips, and the colpeurynter seemed to do no good for eight days following, taxis would not probably have promptly, almost immediately, accomplished the remaining portion of the work?

DR. H. T. BYFORD: Every method has danger, and there is one danger in this method which should be mentioned; that is the danger of sepsis or resorption of decomposing secretions. That there was danger even in this admirably managed case was evidenced by the rise in temperature, followed by the disappearance or decline in temperature on cleansing the bag and vagina. I have seen the immediate decline of fever by washing out the uterus when enlarged and filled with decomposing matter. I object to the introduction of the hand into the rectum to diagnose a case of inversion, as suggested by Dr.

Adolphus. I consider it a dangerous practice because it does a violence to the part which sometimes has done an irreparable injury, and is unnecessary.

Dr. W. H. Byford: With reference to the subject of inversion and more particularly the diagnosis, there are two points which I think are very important in addition to those mentioned by Dr. Jaggard. In cases of polypus attached to the neck of the uterus and filling up a good part of the vagina, the uterus is always enlarged and may be palpated above the pubes. Another point in the diagnosis is the difference in the sensation imparted to the examining finger. A polypus feels as if covered by a shining smooth membrane, unless it is decomposed, while the surface of the uterus gives the sensation of pushing the finger into plush or velvet. I give these two points of diagnosis as the results of my own observation and as being usually present.

With reference to the mode of reducing inversion, I will give some of my own experiences during the last thirty years. In the year of 1859–60, I had a patient sent to me from Lafayette, Ind., with a chronic inversion of the uterus, which I attempted to reduce. I had just read a long treatise on the subject by Dr. White, of Buffalo, and Drs. Thomas and Emmet were then beginning to talk and write about these things, and I went at it with considerable enthusiasm. I got up the cup that Dr. Jaggard mentioned, and I also got a large rectal bougie, an instrument which Dr. White had praised very highly in his first operations, and I made the first attempt lasting about an hour an three-quarters, and when I got through I was worse off than the patient, although she was pretty badly used up. I waited two or three weeks and made another attempt, but after a protracted effort I found my finger passing through the *fundus uteri*. I had been as cautious about the force as I could be, making the effort as gradually as possible but I perforated the fundus. I fully expected that the damage done would be fatal to the patient, but it did not produce any bad effects whatever and she entirely recovered in two weeks and went home. Two years later she came to see me again, but did not wish to have another effort made to have the uterus reduced. Two years later the uterus was found in its normal position. I saw the patient and her physician, and I am certain that nothing had been done to reduce it. I tried two other cases, and made the same efforts but without success. I then concluded that it was hardly worth while to make trials of that nature again, and in the next case I tried the colpeurysis treatment. For some days I was nonplussed, from want of experience, as to the mode of placing the instrument in the vagina. I used the quadrilateral colpeurynter, and after I placed it in the vagina, I found the next day that I had gotten it under the uterus lengthwise, that the fundus was directed toward the vulva, and the neck directly backwards. I was merely compressing the body of the uterus against the *symphysis pubis*. I reflected considerably before I could get the right idea as to the manner of placing the instrument in the vagina. Finally I pushed back the fundus until the axis of the uterus corresponded to the axis of the superior strait, and then introduced the colpeurynter as has been described by Dr. Jaggard, and applied the force. The next day when I came back I found there had been some impression produced, and I went on with the use of it, taking it out every day and replacing it in this manner, until in seven and a half days the inversion was reduced. The patient was a poor woman and it was necessary for her to take care of her child. She did so, attended to it in every way and also cooked three meals a day for her husband. She was on her feet nearly the whole day time, and yet the instrument acted as well as if she had been lying in bed.

Three out of the five cases I have operated on have been as painless as this. I should judge that a young primipara would probably suffer more from the use of the colpeurynter than one who had had children. I have now reduced five cases of inversion by the colpeurynter and have not failed in any case since I commenced using the instrument. The first case of inversion I had, I amputated the uterus. In considering the matter since, I doubt if any other treatment could have been adopted which would have been effectual. The uterus and vagina were inverted, the vaginal canal was entirely outside of the body and the uterus hung down from it, both making a tumor nine inches long. The uterus was very much enlarged in consequence of its being dependent for so long a time. I was in consultation with two German physicians of this city, and they suggested as the patient was living a miserable life and would die before long, we should cut it off. After half an hour's use of the écraseur, it was removed. We amputated a little below the centre of the cervix. There was no bleeding, nothing to give rise to uneasiness. We pushed the vagina back again, put the parts in place and the patient recovered in the course of a month. Having spoken of one spontaneous cure, I will tell you of a patient that I attended in Mercy Hospital in 1864–5, whose uterus was much in the same way as the one that I first operated on, coming out entirely beyond the vulva and dragging down the vagina very low, so that there was simply a circular sulcus between the labia and the vaginal wall. I tried to restore it by manipulation and failed; I proposed to amputate it but the patient would not consent. Meantime one of the internes had fallen in love with her and they went off to Missouri and got married. About six years afterwards, the doctor came back and told me that he had a son and his name was Byford. Upon inquiry I found that the child had been borne by this woman. One case of inversion occurred in my own practice. I attended the patient during confinement, and as far as I know she had no difficulties whatever for seven or eight days. By that time I was on my road to California, and I think Dr. Roler looked after her for some little time after I was gone. In two months I returned home and was informed that she had inversion of the uterus, which I did not believe. I went to see her and found that she was suffering from complete inversion. That was one of the cases I cured by colpeurysis. When the inversion occurred I do not not know. I am certain that I made two or three

examinations as I always did at that time, always one the second day after confinement. I did not notice anything of the kind, and yet it might have been commenced and finished afterwards. I saw a case with Dr. Henry Byford, which had been attended by a midwife, in which the inversion occurred so that the fundus could be touched through the mouth of the uterus, and it remained in that way two or three weeks. The patient was bleeding, but I believed the contraction of the mouth of the uterus was sufficient to prevent it coming through, I advised ergot, and in a few days the uterus was in its proper position.

DR EDWARD WARREN SAWYER: One point is the persistence that one can observe in applying the colpeurysis, without a fatal result following. The interesting case that Dr. Byford has spoken of last, also shows the possibility of the obstetrician, seeing nothing in the first few days of the puerperal state to suggest that anything has gone wrong. Cases are recorded in which the inversion has taken place without the obstetrician knowing it. In the fatal case that occurred in my practice the symptoms were so profound that it was impossible to overlook it, and I think the diagnosis of recent puerperal inversion of the uterus is much easier than of chronic inversion.

In the case which occurred in my practice, the rim of the crater marking the upper border of the uterus, which I palpated through the abdomen, was fully as large as a common bowl, and its edges were very sharply defined. In addition to that the fundus could be distinctly felt through the os uteri. One feature of the paper, which is by no means the least to be commended, is the very admirable and graphic way in which the case was presented.

DR. H. P. NEWMAN: My experience has been limited, but I remember a single case, in which I assisted a surgeon of this city in attempting the reduction of a chronic inversion of the uterus. It was in a hospital, where they had every facility for the operation and it could be proceeded with leisurely. Some two hours were taken up with the various devices for reducing the inverted fundus, all of which were of no avail. There was a complete inversion of the uterus but not of the vagina, and I think previous to the attempt at reduction a fibroid was removed from the fundus of the uterus. No further myomatous condition was discovered at the time, but the difficulty was exceedingly great in this case and nothing whatever was accomplished. I have no knowledge of the subsequent condition of the patient, whether she suffered materially from this, or whether she was afterwards successfully operated on, or the uterus amputated.

THE PRESIDENT asked Dr. Jaggard what means he used to disinfect the colpeurynter.

DR. JAGGARD replied that he washed it thoroughly with soap and warm water, afterwards disinfecting it with a 5 per cent. solution of carbolic acid. The vagina was irrigated with a 2 per cent. solution of carbolic acid, and a bacillus of iodoform introduced.

DR. ADOLPHUS, in reply to Dr. Henry T. Byford said: In complicated cases of tumor in the abdomen or pelvis I would not do without the introduction of the hand into the rectum. I am not alluding to Simon's method, putting the hand in as far as the elbow, but I am talking of the hand. And when the patient is under ether, it can be done easily. It depends upon the size of the hand, perhaps, but with a hand well greased and introduced slowly it does a great deal of good, and gives an immense deal of information which we cannot get in any other way. I examine every case, without conception, *per rectum*, with the finger.

THE PRESIDENT asked Dr. W. H. Byford if he regarded it good practice after all ordinary means had been exhausted and the uterus was still inverted, to amputate?

DR. W. H. BYFORD: When all other measures have failed to effect the object and the patient is suffering so much as to make relief imperative, yes.

THE PRESIDENT: I saw Prof. Chiara, in Florence, operate upon a case of that sort. He placed a silver wire around the uterus and left it in position and the parts gradually sloughed away.

DR. W. H. BYFORD thought that mode of operating upon the uterus bad, that it would have been better to have used the wire ecraseur to stop circulation, and cut it off. But a sloughing mass in contact with the parts would be likely to produce pyæmia.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, November 10, 1886.

THE PRESIDENT, C. H. A. KLEINSCHMIDT, M.D., IN THE CHAIR.

H. M. CUTTS, M.D., Secretary.

DR. D. S. LAMB presented the history of a case and specimens of

SYPHILITIC DISEASE OF BONE.

Annie W., age 41, mulatto, died August 25, 1882. Necroscopy by Dr. D. S. Lamb. Body much emaciated; thick scabs along tibial crests, one foot long and one or more inches wide; bed-sore on each trochanter major and on sacrum. Umbilicus dilated into small pouch, containing an adherent portion of greater omentum. Heart normal, except some fatty degeneration of anterior segment of mitral valve. Small patch of fatty degeneration on ascending aorta. Old pleuritic adhesions at base of right lung and between lobes; œdema and hypostasis of lower lobe and some tubercles. Firm old adhesions of left lung and between lobes; lung anæmic contained tubercles; tubercular cavity and evidences of bronchitis in upper lobe. Bronchial glands pigmented. Thin blood clot in lower part of œsophagus. Omentum adherent to left side of abdomen and to bottom of hernial sac. Stomach displaced downwards; contained large quantity of blood, clots, etc.; clotted blood in small and large intestines, which, with the stomach, were normal. Liver anæmic; firm adhesions to diaphragm and hepatic flexure of colon; weight, 120 ozs.; left lobe disproportionately en-

larged; edges rounded; iodine test showed amyloid degeneration. Gall-bladder contained some green bile. Spleen 26.5 ozs., amyloid. Kidneys large; left weighed 8 ozs., amyloid. Uterus showed patches of inflammatory exudation on peritoneum. Right ovary converted into cyst size of walnut in which were colloid masses size of small shot; left ovary enlarged, contained several cysts and colloid deposits. Bones as far as examined showed results of inflammation, probably syphilitic. Sternum; surface irregular; depressions; periostosis and osteoporosis. Costal cartilages porous. Clavicle much atrophied throughout; surface irregular at sternal end. Knee joints contained fluid and showed erosions of cartilage and existence of the bones. Lower ends of femora, patellæ, tibiæ and fibulæ showed surfaces irregular, depressions marked; new growths of bone; general osteoporosis. Bones of feet, especially of tarsi, somewhat eroded; fine periosteotic growths; some osteoporosis, especially of calcanea.

Microscopical examination by Dr. J. C. McDonnell showed that liver and spleen were amyloid; kidney, amyloid and cirrhotic; and the colloid degeneration of ovary involved the stroma.

Dr. Samuel S. Adams read the history of a case of

HÆMATEMESIS.

(See page 35).

Dr. A. F. A. King said that Dr. Adams stated that he had to do with a simple gastric ulcer. This might be doubted, as there were apparently no symptoms of its presence now, and, further, some of the usual symptoms were absent before the hemorrhage. There had been no pain after eating for one thing. He did not mean to dispute Dr. Busey's claim to priority in the use of iron in hæmatemesis, but several years ago he had reported a case of this affection in which everything had been used without avail. Finally, twenty drops of the liquor ferri subsulphatis in water were given. There was immediate vomiting of clotted blood, but no more hemorrhage. The hemorrhage in this case was from alcoholic gastritis. There was good recovery, but the patient died from the same cause some years later.

Dr. G. L. Magruder said that fifteen years ago he had a patient suffering from a violent malarial fever. One morning he began vomiting bile, and about noon vomited a large quantity of blood. He had used a mixture of acetate of lead, acetic acid and morphia and there had been no return of the hemorrhage. The patient was much prostrated for several days afterwards. Last winter he had had a second case and the same remedy stopped the hemorrhage in two days. The acetate of lead is a sedative and a mineral astringent, which class he thinks better than the vegetable astringents. This was so in Dr. Adams' case. Gallic acid and ergot, he thought, were nauseating and hence not useful in the premises. Tannic acid would work better, where drugs could be applied directly to bleeding vessels. Gallic acid acts after absorption, but is less of a styptic than tannic acid when applied directly.

Dr. I. Bermann thought that gallic acid was a very valuable styptic when applied directly. He recollects a case of an old gentleman who had had twelve teeth drawn. Hemorrhage being persistent for six hours, a doctor was sent for and Monsel's solution was applied on cotton, but without success. About 2 A.M. he was called in and succeeded in stopping hemorrhage with ice. He went home, but was called again in a few hours. This time he took along with him a powder of two parts of tannic acid to one part gallic acid, a mixture highly recommended by Morrell McKenzie. The exhibition of the powder stopped the hemorrhage and there was no return. This was in favor of vegetable astringents.

Dr. Magruder said that, nevertheless, tannic acid precipitated albumin much more readily than gallic acid. Besides, two parts of the powder used by Dr. Bermann were tannic acid.

Dr. S. C. Busey said that he did not claim the priority of the use of tinct. ferri chloride in hæmatemesis, but he had never seen it recommended in such large doses as he gives it. His first case was a lady with cirrhotic liver. She had been having hemorrhages from the stomach and he had given her all sorts of things. He arrived one day just as she went into collapse from a severe hemorrhage. He stepped to the mantel and poured out a teaspoonful of the tincture of the chloride of iron from a bottle-full which was there. The patient had just vomited. He gave the iron in a half glass of water and there was no recurrence of the hemorrhage. About a year later he did the same thing with a like success. His method of giving the iron was on an empty stomach—*i. e.*, just after vomiting, and in about one-half glass of water, in order that it may be well diffused over the stomach. Dose, one drachm. He has had several other cases with equally good results. The authorities do not approve of the use of iron. In his cases he had obtained the best possible results and should continue to employ the agent. There is doubt in almost all cases as to whether we are dealing with a gastric ulcer or not. There is no pathognomonic symptom of this affection. It is one of the most difficult of diseases to diagnosticate. That it frequently occurs without being suspected is proved by the number of cicatrices, less often ulcers, we find in the stomach at autopsies upon persons who present no history of ulcer. There may be for years only the symptoms of ordinary gastritis, and until hemorrhage occurs ulcer may never have been thought of. Hemorrhage was the most sure sign of the disease. The age and sex were important factors in diagnosis also. It occurs most frequently in the female between the ages of twenty and thirty. Males between thirty and forty are most likely to have it in that sex. It is often associated with nervous disturbance and may present the symptoms of gastralgia. He thought Dr. Adams' case was one of gastric ulcer, as there was no cirrhotic liver, obstruction to portal circulation, miliary aneurisms or traumatism to account for the hemorrhage. The patient, moreover, was of the the right age and sex, and had lived a life liable to

produce ulcer. Pain after eating, he thought, was absent in a majority of cases. Hemorrhage or perforation were the usual causes of death.

DR. C. W. FRANZONI said that three years ago he was called to see a gentleman who had lived much in tropical climates. He had been having copious hemorrhages from the stomach, reported as enough to fill a good-sized basin. While he was present the patient vomited nearly a quart. He exhibited a drachm of gallic acid in one dose and there was no return of hemorrhage. The next day the patient's whole body was covered with an urticarious eruption which he supposed was due to the gallic acid.

DR. BERMANN remarked that he had seen some cases of atrophy of the optic nerve, an affection which frequently follows hæmatemesis. The only treatment for it is large doses of strychnia.

DR. KING said he was not yet convinced that Dr. Adams' case was one of gastric ulcer. Possibly, he thought, the greater frequency of gastric ulcer in woman than in man might be accounted for by the supposition that corsets obstructed the portal circulation. He does not claim priority in the use of iron for himself, for in the case he reported the drug was suggested by Dr. J. T. Young, who was present.

DR. BUSEY said that gastric ulcer occurs largely in women during their active menstrual life and the hemorrhage is often called "menstrual hæmatemisis." It is common in neurotic and chlorotic women, but whether as cause or effect he cannot say. He thought that the neuroses as causative elements were over-estimated. Perforation by ulcer was more common in women than in men, as for some reason the ulcer is oftener situated on the anterior wall of the stomach.

DR. ADAMS said that though he himself was convinced that the hemorrhage was from an ulcer, it did not absolutely prove its presence. He had seen the patient frequently for the past two years and is certain that if she had been sick during that time she would have consulted him. There was no malaria, and aneurium was unthought of. The history reported was just as he found it, and from these symptoms he had drawn his conclusions. There was no biliousness, and the attacks of indigestion might have been serious or of slight account. The hæmostatics used were those recommended by Dr. Welch in "Pepper's System of Medicine." The patient was said to lace tightly, but for this he could not vouch. The amount of blood vomited was as he himself saw it, and not as reported by her friends.

Meeting of December 1, 1886.

THE VICE-PESIDENT, J. B. HAMILTON, M.D., IN THE CHAIR.

DR. W. W. GODDING, Superintendent of the Government Hospital for the Insane, read a paper entitled

THE PROBLEM OF THE INEBRIATE.

(See page 29.)

DR. TONER said that the medical profession would welcome the incorporation of an institution for the care of these persons. The question of the laws and regulations for its government, however, was one that could not be decided hastily. He moved "that a committee of three be appointed to consider the question of the best management of the inebriate, and to suggest legislation to that end."

DR. GODDING remarked that he was in hopes that his paper would draw out discussion on the question of the propriety of sending inebriates to St. Elizabeth's. At the last session of Congress a bill had passed the Senate which permitted the sending of inebriates to St. Elizabeth's. The bill had not yet passed the House. He did not think that inebriates should be confined with the insane. They needed special treatment for their disease, for in his opinion inebriety is a disease. Nor do the insane people like the contact with the inebriate. He hoped that the Medical Society would take some steps looking towards the establishment of a special hospital for the inebriate.

DR. J. E. MORGAN said that he had seen some reports of such special institutions, and they showed failures.

DR. GODDING said that the only State establishment that he knew of was at Binghampton, N. Y. This had been a failure, partly through bad management. The Washingtonian Home in Boston had done good work, and there was also one in New York city. The system had not yet been sufficiently tried. In Canada and England such special hospitals are in existence, and their necessity is fully appreciated.

DR. J. M. TONER said that failures of these institutions were undoubtedly due to the manner of commitment and to the indefiniteness of the time for which the person is incarcerated. The craving for drink may never be cured, but, in his opinion, the public are none the less responsible for patients' care.

DR. R. REYBURN said that in advocating an institution of this kind we should consider how far the community should be saddled with the care and expense of persons who are personally responsible for their deplorable condition. He did not believe that reformation could be accomplished so well in a public asylum as by private communications, and he thought that every citizen was morally obliged to attempt the cure of an inebriate with whom he comes in contact. Institutions for the purpose under discussion had nearly always proved a failure.

DR. S. C. BUSEY said that Dr. Reyburn's arguments were equally effective against hospitals for the insane or any other special disease. If inebriety was a disease—which he himself was not quite prepared to believe—why not have a hospital especially for inebriates? The community could be taxed with equal justice for this as for any other hospital. In fact the municipal authorities, who derive an immense income from the too frequent drinking places, should be compelled to help support the inebriates they produce. Moreover, well-to-do people do not go to free hospitals or asylums. They or their friends can usually pay for their keeping. Drunkenness is the cause of nine-tenths of the crime and poverty of the country. It fills our prisons, insane asylums and

poor-houses, and the community is directly responsible for the care or cure of its victims. Because previous attempts have failed was no reason why we should not try again. He fully agreed with Dr. Godding, that the inebriate and the insane should not be confined together. He knew of no man to-day who could be called an expert on inebriety, and it will take years of experience, and that not in private practice, to make one. A hospital for inebriates would be the development of another specialty, which, like all specialties, would add something to our general medical knowledge.

Dr. J. T. Howard said that there had been for some years a law incorporating the Washington Inebriate Asylum. An appropriation had been several times asked for from Congress, and interested gentlemen are still at work with this end in view. They are waiting for the passage of the bill mentioned by Dr. Godding. In reply to Dr. Busey, he would state that there are already doctors who make this disease a special study, as for instance Dr. Croth ers, of Walnut Hill Lodge. He even publishes a journal devoted to the subject.

Dr. N. S. Lincoln said that he was heartily in favor of establishing an inebriate asylum, which he thought most important to the whole community. There is scarcely a family in town which is not cursed with, at least, one relative given to excess, and with whom it is utterly useless to reason. Such persons should be confined for a year, or a life-time, and the institution could be easily made self-sustaining. The patients should be compelled to work at their trade or profession, and should remain as long as they are incapable of self-restraint. He fully agrees with Drs. Godding and Busey, that an insane asylum is not the place for drunkards. Nor are the general hospitals suitable, for in these, as a rule, the patient is given a small amount of stimulant daily and he comes out no nearer cured than when he went in. He does not believe liquor necessary in such cases, and he has never known delirium tremens to follow complete and sudden stoppage of stimulant. He has seen cases of relapse, after treatment, from all the best institutions and hospitals, and he only knows of two cases where there had been a permanent cure.

Dr. Reyburn hoped that Dr. Lincoln would not make the argument that relapses were so frequent and cures so few, before a Congressional committee. He thought such institutions an attempt to do at public expense what should be done by individual efforts. He thought that Dr. Busey's argument that the municipal authorities, who get an income from drinking places, should support the drunkard, was beginning at the wrong end. It seemed to him better to limit the evil of drinking, and not first make drunkards and then take care of them.

Dr. A. F. A. King requested Dr. Godding to give the Society some of the reasons why it was not advisable to confine the inebriate and insane together. He said that many people did not care to see their friends in an insane asylum. Certainly there was no suitable place in this city to send a drunkard.

Dr. Godding replied that if the pending bill passed Congress it would legalize the sending of the drunk to the insane asylum. In a week or so these people would be sane in the eyes of the court, and on obtaining a habeas corpus the patient could set himself free. These persons were not committed as insane, but as inebriates, and their association, when sober, with the morally insane, was not a good thing for them. Most of them can never be permanently reformed, and certainly there is no chance of this in the thirty to ninety days for which they may be committed. If committed as an insane person, the question arises as to how far such an individual could be compelled to work. In his opinion, if inebriates are to be benefited they should be made to work under the supervision of a medical officer.

He thought that an inebriate asylum could easily be made self-sustaining.

Dr. J. T. Howard said that the rules of the Washington Inebriate Asylum contemplated maintaining the inebriate one year and at work. He hoped that when a committee was appointed they would support this institution.

On motion of Dr. J. M. Toner, it was

Resolved, That a committee of three be appointed to consider the question of the best management of the inebriate, and to suggest legislation to that end.

The Chair appointed Drs. W. W. Godding, N. S. Lincoln and J. M. Toner a committee under the resolution.

Meeting of December 22.

REPORT OF COMMITTEE ON DR. GODDING'S PAPER.

The committee appointed to consider the question of inebriates and what treatment and legislation can better their condition, have had the subject under consideration and beg leave to make the following report:

It is clear that there should be some change in the present manner of dealing with persons afflicted with this infirmity, some treatment more radical and efficient than has been hitherto attempted here, and that to this end there should be legislation recognizing their defective will power, and providing for their care as incapables. We do not claim or imagine that this abnormal condition exists in every person who drinks or even occasionally gets drunk, but we believe it is present, disturbing the emotions and judgment and dominating the will of the confirmed inebriate, and it is his case that we are here considering. Of this victim of a confirmed appetite for intoxicants we affirm that he is a non-producing, wasteful, disturbing factor of the body-politic, his influence is everyway bad, the life he leads worthless to himself and his conduct an open scandal to the neighborhood. We therefore conclude respecting him, that he is a public nuisance to be abated, a survival of the worst, an anachronism in the civilization of the nineteenth century.

In regard to the disposition to be made of him there are three questions to be considered: First, What does society demand? Second, What does the inebriate need? Third, What legislation will meet these requirements?

What society demands in the first instance is pro-

tection; protection against violence at the hands of a maudlin frenzy whose records are in each morning's paper, that day by day is writing tragedy all over the land; protection against that deterioration of moral fibre, a deterioration born of the saloon and the brothel, which with its deadly dry-rot is sapping the old time virtues of the commonwealth; protection against that race deterioration—those inherited neuroses, chorea, epilepsy, idiocy and insanity—of off-spring begotten in a debauch, where by a strange nemesis the innocent are made to suffer for the guilty under a visitation of the "sins of the fathers on the children unto the third and fourth generation."

Society further asks, that those whom nature or affection has allied to the inebriate shall be protected from the misery and wretchedness, the poverty and degradation which come to the drunkard's home. To the old time question "shall I not do what I will with mine own?" society emphatically answers, "No." The social compact, with or without public office, is in the nature of "a public trust" and you may not violate it, besotting your manhood and squandering your property to the beggary of your family and not expect society to interfere. For those hapless children of inebriate sires, weighted with a "heritage of woe" in the only life that is theirs to live—and yet poor as it is, the right to live in the world is still their birthright—will not society see to it that they have all the chance there is, nor permit a drunken father to trample it out? Shall we not take heed that he "offend not one of these little ones?"

Secondly. What the inebriate needs is correction and reformation. Correction first, because until the idle habits of his life are corrected there can be no reformation. With compulsory detention, and labor also compulsory, he will then be favorably situated for reformation to begin. If this is ever to take place in the victim of this morbid craving for intoxicants it will be through a period of enforced abstinence, an abstinence which must be total and life long. So, too, if the reformation is to be lasting, out of the compulsory labor of his sentence must spring habits of industry that he will take back into the world and into his life. Very important in the direction of reformation is hygienic treatment. With tonics, heathful exercise and simple nutriment, the system is to be gradually brought back to something like a normal condition. To be permanently reformed he must be built up from the bottom. The secretory organs will require a long course of alterative treatment—a very much altered man he must become before society will have any use for him, and he be of any use to society. Most especially does the inebriate need moral hygienic treatment and the strength to be gained from moral teaching. This is placed last in order, not because it is less important than the physical, but, as in the evolution of the race moral and religious sentiments are evolved latest, so in the deterioration of inebriety they are the first to suffer and the hardest to restore.

Thirdly. Of the legislation needed to bring about these results. The bill introduced and passed in the Senate at the last Session of Congress provides for the legal guardianship of the inebriate, with authority to commit to an institution for detention and treatment. The defect of the proposed law is that it fails to make labor compulsory. We believe that the power to compel the inebriate to work is essential to the success of his treatment. The idleness of his dissolute life must be rooted out before better resolutions will grow there. The commitment should be by a judge of the supreme court of the D.C. after due hearing, and should be for a term of years, or, perhaps better for an indefinite period. The power to discharge should be in the hands of any judge of the court, and a power to furlough should reside with the board of managers of the institution; this a kind of ticket-of-leave system, the continuance or extension of the furlough to depend upon the conduct of the individual. Voluntary commitments might be allowed, but with the time of detention to be stipulated as not less than one year. Any enforced abstinence short of this will seldom prove of any lasting benefit.

Associated with the necessary legislation for confinement is the provision for the house of detention and its management. This should be an Inebriate Home for actual residents of the District of Columbia, and under the control of the district commissioners. As already indicated, we think it should have the character of a correctional reformatory. The site should be selected and the buildings constructed with especial reference to custody and employment. It should be protected from intrusion and so guarded as to prevent the escape of its inmates. An island would be the best possible site for such an institution, but since we have no suitable island a large farm in the outskirts of the district with ample grounds for out-door work should be selected. The buildings themselves should be plainly built—simple brick structures, with no ostentatious architecture to swell the cost and set the fashion for lavish future expenditure, but carefully planned, conveniently arranged, with light, airy and pleasant workshops suited to varied forms of industry These buildings should be in groups to afford opportunity for classification of the inmates. Men of means and talent, but victims of an unfortunate appetite, coming voluntarily to this city of refuge to be healed of their infirmity would be neither pleased nor benefited by a daily contact with abandoned sots, who scoff at misfortune and have no wish to reform. Nor should the fallen statesman, even though without means, be required to mess with drunken negroes from the fish landings. Yet the scope and the accommodations of such an institution should be wide enough to gather in and care for all these victims of a common infirmity, and the physician in charge should be a man broad enough and keen enough to recognize and provide for these difficulties as they arise. To this institution should also come, perhaps, for a limited restraint and special provision in a district infirmary department those unfortunate victims of a recurrent appetite, properly designated as dipsomaniacs, who now and then, overtaken by the consuming thirst, breaking over all barriers of self-respect and family ties in their periodic sprees are for a time more violent and dangerous than the ordinary

maniac; and yet when the storm has passed over, casting down everything before it, they go back to their work and are again for a time useful, law-abiding citizens. A law that provides for inebriety should not overlook them. We think that the superintendent should be a medical man, a physician who has made inebriety and its treatment a special study. More than this, he should be equal to his great office, with the support of an ample and able staff; he should be an autocrat in his authority, alive to his responsibilities, with the power which goes with an active brain, an iron nerve, a cheek of brass, ribs of steel and a great heart beating beneath them; never afraid to take the consequences; a man fertile in resources, ready to attempt the impossible of other men and to accomplish it, because he has faith in himself and in his work. With such a man at its head the District Inebriate Home would be a success from the start.

How should it be supported? By voluntary contributions from philanthropic individuals, by the proceeds of sales from the shops and gardens, by receipts from voluntary pay patients, and then whatever it lacks of being self-supporting—and it will probably always lack something, for the individuals who voluntarily come to it for healing will, as a rule, be as completely stripped of means as He was who went down from Jerusalem to Jericho—should be made up "by appropriations from the U. S. and District treasuries in such proportions as Congress may determine." And while our present liquor licensing system remains, your committee would suggest that all liquor licenses be doubled, and that one half, or the whole if necessary, of the revenue derived from this source be set apart for the support of the Inebriates' Home. So at last might their "sowing of the wind" gather its own harvest, and the people see a relation established between the cause and the effect.

Your committee beg leave to present herewith a copy of the Inebriate bill now before the Judiciary committee of the House of Representatives and to say that in their judgment the inebriate should not be confined with the insane as therein proposed. Respectfully submitted,

J. M. Toner,
W. W. Godding,
N. S. Lincoln.

A BILL

To Provide for the Confinement of Inebriates in the Government Hospital for the Insane.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That whenever by petition, under oath, of either parent, brother, sister, son, daughter, or guardian, or commissioner or justice of the peace of the District of Columbia, any person actually resident in the District of Columbia shall be alleged to be an habitual drunkard, incapable of taking care of himself or herself, or his or her property, the supreme court of said District, in special term, shall have the power, in its discretion, on such preliminary examination or inquiry as it may think proper to make *ex parte* to issue an order of notice to such person to appear before said court, or in its discretion, to issue a warrant to the marshal of the United States for the District of Columbia to arrest and bring the person so charged before such court; and it shall be the duty of the said marshal to obey such warrant; and said court shall cause a jury of good and lawful men, to be summoned by the said marshal, to be impaneled forthwith, and shall charge said jury, under oath, to inquire, in the presence of such person, whether he or she is an habitual drunkard, incapable of taking care of himself or herself; and the proceedings in such case shall be like those now authorized by law in cases of persons alleged to be lunatic or insane. When such petition is filed by any person other than a commissioner or justice of the peace, the court shall cause notice of the filing thereof to be given to the attorney of the United States for the District of Columbia, whose duty it shall be to attend such hearing in the public interest; and the rules of law and proceedings applicable to the property of lunatics shall apply to cases of persons declared to be habitual drunkards under the provisions of this section, except when herein otherwise directed; and all persons who may be alleged to be habitual drunkards may dispense with the legal proceedings to establish the same, and may, with the approbation of the court, when said petition may be filed, appoint his or her own guardian, and may voluntarily enter the Government Hospital for the Insane for a limited time; and the superintendent of the said hospital may retain such person the length of time he or she may have agreed therein to remain; and if the person against whom the petition may be filed shall be found by the jury to be an habitual drunkard, incapable of taking care of himself or herself, it shall be the duty of the court to appoint a guardian of such person; and such guardian shall, with the written assent and approbation of the court have the power of confining such person in the said asylum for such length of time as the court may in writing approve; but said guardian, with the written assent and approbation of the court, may at any time release from confinement such habitual drunkard; and the period of confinement of said habitual drunkard may, by the said guardian, with the written assent and approbation of the court, be from time to time extended for such periods as may be necessary for his or her complete reformation. Said court shall have power to discharge such guardian and appoint another in his or her place, and shall have power to discharge the guardianship altogether whenever the court shall, on due inquiry and hearing be of opinion that such guardianship is no longer necessary. The expenses of maintaining such habitual drunkard in said hospital shall be governed by the same provisions now in force in regard to the support and expenses of insane persons therein: *Provided*, That no person shall be admitted to said Hospital for the Insane under the operations of this act who shall appear to the court on such hearing to have come or to have been brought into the District for the purpose of being admitted therein.

FOREIGN CORRESPONDENCE

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

The Better Sanitation of Houses—A Chair from Hunter's Bedstead—Hospital Sunday Fund—The Conjoint Scheme.

Early in the next session of Parliament an introduction of a new bill is promised, to be brought in by Dr. Farquharson "for the Better Sanitation of Dwelling-houses, Schools, Hotels, Hospitals and other Buildings within the United Kingdom." In scope and aim, it would, therefore, seem the bill is of an exhaustive character, so much so, indeed, that aspiring sanitarians will be well content if at first a modicum of the things sought for get parliamentary consent. In principle the bill is simple and far-reaching. Its sub-title is given as the "Sanitary Registration of Buildings Act." It provides in the first instance for the adoption of its provisions in the City of London and in the area under the jurisdiction of the Metropolitan Board of Works. All towns in England of 50,000 inhabitants and upwards are included in the localities in which it is to be applied, while "such other districts in the United Kingdom as may adopt the act" are to have the option of adopting it should its provisions become law. The local authorities charged with administering the Public Health Act would thus become the Sanitary Registration authorities for their respective areas, towns or districts. It is proposed that prior to June 1, 1888, each sanitary authority shall cause the owner, lessee, sub-lessee or occupier of every building, "occupied or intended to be occupied," to deposit with the said authority a certificate for each building in accordance with the terms of the act. This certificate, which is naturally the pivot on which this entire question of sanitation turns, forms the subject of a special clause in the proposed measure. Here difficulties begin, as is evident from the results of an adjourned discussion on the measure which took place a short time since at the Society of Medical Officers of Health. If a certificate of the sanitary safety of buildings is to be granted, and if on the possession of this document people are asked to found an assurance that a building is sanitarily trustworthy, it certainly behoves them to inquire somewhat minutely into the status of the persons who are by the act qualified to inspect and certify under its provisions. The certificate may be granted as the bill now stands by members of the Royal Institute of British Architects and members of the Institution of Civil Engineers who are in practice as architects, surveyors, or civil engineers. Furthermore, that architects or civil engineers who have been in practice five years at the passing of the act, and who register their names accordingly, may also grant certificates. Sanitary associations incorporated by license of the Board of Trade, medical officers of health and medical practitioners qualified in sanitary science are to be entitled to sign those documents. Last on the list come surveyors and engineers of local authorities, so far as their own districts are concerned, and, adds the act "such other persons as the Local Government Board may authorize." Here are clauses and persons enough and to spare. Are they all duly qualified?

At the late meetings of the Society of Medical Officers of Health, it was considered by certain speakers that among the persons named in the section of the act whose terms have just been quoted, there are included many men whose knowledge of sanitation, and of house sanitation particularly, must be somewhat slight. It is not every architect who professes a knowledge of house sanitation, hence it is easy to understand how the provisions of a well-intentioned act may lead to more harm than good. Of what value would, for instance, be the certificate of a local surveyor, who either wilfully or in gross ignorance neglected to provide for trapping off the house from the public sewer. Professor Corfield went so far as to advise his society to petition against the bill in its present form, and to insure that it should be so remodelled as to ensure persons entitled to certify the healthiness of premises, should at least possess some definite qualification or other in sanitary science. Dr. Corfield's objection was expressed by saying that as it stood the new act was one for specialists, and for them alone, the specialists being architects, civil engineers and surveyors. As such, he held the measure should be rejected. Dr. Corfield would have medical officers of health alone entitled to grant certificates, but it was considered by many present that this practice would simply make the bill as narrow in Dr. Corfield's direction as in that of the architects.

An interesting relic of that great surgeon, John Hunter, has just been presented to the Royal College of Surgeons. It consists of a chair formed out of the materials composing the bedstead on which John Hunter slept nightly for many years, and on which his remains were laid previous to removal for burial. The idea of converting the unwieldly frame of an old-fashioned four-poster into a remarkably handsome and imposing looking chair was due to the late Mr. Frank Buckland, to whom the bed had been given as a birthday present by Professor Owen. The chair, up to the present, has only once been used in public, on October, 1879, when Dr. Wadham presided at the annual dinner of St. George's Hospital. Another point of interest in connection with the presentation lies in the fact that it was owing to Mr. Buckland's personal exertions that the remains of John Hunter were removed from the vaults of St. Martin's-in-the-Fields and deposited in the more honored resting place in Westminster Abbey. Mr. Buckland spent days, amidst not very pleasant surroundings, searching for the coffin containing John Hunter's remains. Mr. Buckland used to be fond of remarking that he felt prouder of being the means of laying John Hunter's remains in Westminster Abbey than of anything he ever did in his life.

It is gratifying to find by the report presented by the managers of the Metropolitan Hospital Sunday Fund that the receipts this year were larger than

they have ever been before, amounting to £40,399 7s. 7d., as against £34,320 8s. 5d. last year, and an average of £30,121 6s. 8d. in the thirteen years preceding. The total expenses entailed in the collection and distribution of this sum amount to rather over £2,000. It is considered that the Saturday and Sunday movements might well be combined, and the expense of two offices—secretary's and clerk's—be thereby saved.

The Councils of the Royal College of Physicians and the Royal College of Surgeons are steadily working to effect the scheme to grant a medical degree to students who pass the examinations of the conjoint board. The feeling prevails that students should not receive an M.D. degree at the time of qualification, or after a qualifying examination, but that some further proof that opportunities for obtaining experience in the practical work of the profession have been utilized should be required. The conjoint boards are shortly to meet again in connection with this matter. G. O. M.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Pathology of Scarlatinal Nephritis— Removal of the Vermiform Appendix.

At the last meeting of the New York County Medical Association Dr. Frank Grauer, of the Carnegie Laboratory, who during the past summer has been making special researches on the subject in Friedländer's laboratory in Berlin, presented a valuable contribution to our knowledge of the *Pathological Anatomy of Scarlatinal Nephritis*. He followed Friedländer's classification in general; dividing the varieties of the affection met with post-mortem into three types, viz.: initial catarrhal nephritis; large, flabby, hæmorrhagic kidney; and acute glomerulonephritis; or nephritis post-scarlatinosa.

The initial catarrhal nephritis is the form met with in the first week of scarlatina; generally accompanying the rash, lasting for a few days to a week, and then gradually disappearing. It rarely tends to death, and is liable to be entirely overlooked. It is only recognized by a chemical and microscopical examination of the urine, in which are to be found a slight amount of albumen, mucous and hyaline casts, and, more rarely, red and white blood corpuscles, renal epithelium, and granular casts. The kidneys in this variety he described as slightly enlarged and hyperæmic. The capsule strips off very readily, and on a cut surface there is some thickening of the cortical substance, with more or less loss of striæ. The glomeruli appear as red clots. A microscopical examination, he said, showed swelling and granular degeneration, with desquamation, of the epithelium, especially that lining the convoluted tubules. Hyaline and granular casts were often found in the straight tubes, and, when the process had been more severe, the beginning of a round cell infiltration in the interstitial tissue. It was only in those cases in which children die from the sequelæ or complications such as diphtheria and broncho-pneumonia, that an opportunity was afforded for noticing these changes.

From the description given it might be supposed that the changes are those belonging to a parenchymatous inflammation, but Friedländer has pointed out the following differences: Parenchymatous inflammation, according to Virchow, leads to fatty degeneration of a cell, with disturbance of its function; and this process does not occur in the epithelial cells lining the uriniferous tubules in the form of nephritis under consideration. Then, on the other hand, we have a cellular proliferation in initial catarrhal nephritis; which, as a rule, does not occur in parenchymatous inflammation of the kidney.

The second form of nephritis met with, that characterized by the large, flabby, hæmorrhagic kidney, is not as common as either of the others; Friedländer having found it present in only twelve out of 229 autopsies made by him in cases of scarlatinal nephritis. It generally occurs from the first to the fourth week of the disease, and runs a rapid course; in some cases the urine remaining normal until within twenty-four or forty-eight hours of death. It is generally found in those cases accompanied by extensive angina and diphtheritic inflammation, and the post-mortem appearances are as follows: The kidneys are enlarged, and the cortex is studded with ecchymoses and large hæmorrhagic infiltrations. The cortical substance is thickened and greyish red in color, there is complete loss of the striæ, and the glomeruli are, as a rule, invisible.

Microscopically, Dr. Grauer said, the tubules were found to contain the various forms of casts, and blood corpuscles, degenerated and desquamated epithelium, and an increase in the connective tissue characterized by a round cell infiltration which was situated mainly around the glomeruli and between the convoluted tubules. In addition, small abscesses were often found in the cortical substance, in which, by means of one of the aniline dyes, micrococci could not infrequently be detected. Whether the latter had any direct relation with the etiology of scarlatina or diphtheria, or whether they were merely one of the forms of micrococci found in acute abscesses, he was unable to state. This form of nephritis is characteristic of scarlatina alone, as it has been found in cases of primary diphtheria, and Friedländer regards it as a septic inflammation of the kidney.

The larger part of the paper was devoted to the third and most important form, acute glomerulonephritis, or nephritis post-scarlatinosa. This is the affection which generally occurs in the third or fourth week of scarlet fever, when the patient is convalescing. Having described its main features and the characteristics of the urine in light and in severe cases, he stated that Friedländer found this form of nephritis present in forty-two out of his 229 cases. To Klebs was due the honor of first pointing out that the glomeruli were affected. He noticed, in making fresh sections of the kidney with a double knife, that the glomeruli were anæmic, and after

washing them out with water, that they became dark and cloudy.

Having given a description of the microscopical anatomy of the glomeruli, in regard to which there still exist some differences of opinion among histologists, and of the microscopical appearances noted by Klebs, Klein, Ribbert and Langham in glomerulo-nephritis, Dr. Graner went on to give some account of his own observations based upon nine cases of the disease which he studied in Friedländer's laboratory, and a report of which he embodied in the paper. The results obtained by him are as follows:

Macroscopical Appearances.—The kidneys are enlarged and hyperæmic. There is no loss of cortical strie, and in some cases the cortex may be somewhat thickened. The glomeruli are pale, prominent, and more or less enlarged.

Microscopical Appearances.—The glomeruli are bloodless, but very rarely a red blood corpuscle may be seen in the lumen of a capillary. When examined with a low power, the glomeruli are found larger than normal, and covered with a mass of nuclei. With an immersion lens the following changes are noticed in the capillaries: In some the only change found is a thickening of the endothelial layer, which becomes more granular. In others the lumen of the vessel is filled with a rich nuclear protoplasm. Dr. Graner thinks that these nuclei are the nuclei of the proliferated endothelial cells, and not those of white blood corpuscles, as contended by Ribbert and other observers. With reference to the glomerulo-epithelium he has noticed swelling and proliferation. It is still considered by some authorities that it is the proliferation of the glomerulo-epithelium that produces a compression of the capillaries, and thereby obstructs the circulation. In all the specimens which he examined, although proliferation of the glomerulo-epithelium was present, the loops, as a rule, were larger than normal; showing that the pressure was from within, and not from without. Proliferation of the capsular epithelium, as described by Klebs, was not observed in eighty-two sections examined by him; but he has observed it in other forms of scarlatinal nephritis. Hypertrophy of the left ventricle of the heart, as first pointed out by Friedländer, is always present in glomerulo nephritis. In concluding, Dr. Graner, who exhibited under the microscope a number of specimens illustrating points brought out in the paper, expressed the opinion that the term glomerulo-nephritis ought to be restricted to those affections in which there is obliteration of the loops of the capillaries, and not applied to those in which there is only a proliferation and desquamation of the glomerulo and capsular epithelium, as this change has been noticed in all forms of chronic nephritis.

The discussion on the paper was opened by Dr. Flint, who in the course of his remarks said that one of the questions of greatest interest suggested by it was that relating to death from so called uræmic poisoning. This was a live question, and personally he had very decided convictions in regard to it, which were very considerably at variance with the views which he had formerly held. From the investigations concerning excrementitious substances which he had made during the last few years, he had come to entertain some doubt whether urea was a poison after all. His experiments had convinced him that water is formed *de novo* in the system from a combination of the elements composing it; so that under these circumstances water itself was an excrementitious product, and yet it was certainly not a toxic agent. As to the cause of death in these cases of scarlatinal nephritis, which was commonly attributed to uræmic poisoning, he believed that the parenchymatous changes which were noticed in the patient after death were due very largely to the excessive pyrexia of the scarlatina. The special direction which these parenchymatous degenerations took in different infectious fevers was governed, he thought, by the special cause of the disease; each affection having its own peculiar *contagium vivum*, with its specific mode of action in the system. In scarlatina this showed a strong predisposition toward the kidneys, and in scarlatinal nephritis the urine was diminished in quantity, of high specific gravity, and contained a large amount of albumen, because these organs became choked with excrementitious matter, and could no longer be washed out by the water derived from the Malpighian tufts.

Dr. Isaac E. Taylor, having referred to the fact that in the cases studied by Dr. Grauer death had occurred in from four to eight weeks, said he would like to inquire what the condition of the kidneys was in those cases which terminated fatally within thirty-six hours from the onset of the attack of scarlatina? He related in this connection several cases which had occurred in his own experience.

Dr. Daniel Brown thought that the virus of scarlatina found a soil peculiarly fitted to it in the skin, the intestines and the lining membrane of the glands, and that by its effect upon these structures an irritation of the nervous system was set up that was sufficient to account for the class of cases referred to by Dr. Taylor. It was very much, he said, as though the child died from shock. Scarlet fever had the effect of arresting almost all the secretions of the body, and in his treatment, therefore, he was in the habit of employing such remedies as tend to stimulate the secretions. By pursuing this course he had found that the temperature was kept down, and that the danger of unpleasant sequelæ was greatly diminished.

Dr. Gouley said that a number of years ago, during several epidemics of scarlatina at the Nursery and Child's Hospital, it had been somewhat surprising to him, as well as to the late Dr. George T. Elliott, who was one of the attending physicians, that so many of the children were affected with nephritis; and the point that interested him most was, that of the many who recovered, the larger number recovered promptly and completely. He should like to inquire, therefore, whether it was not rare for chronic nephritis to result?

The President, Dr. Leale, said that some fifteen years ago, when he was attending physician for diseases of children at one of the largest dispensaries in the city, he was struck with the large number of cases of dropsy that presented themselves; and he found that the great majority of them were in chil-

dren who had passed through an attack of scarlet fever without any medical attendance. An interesting point which he had noticed in examining the urine from day to day in cases of scarlatina was, that although for a time there might be no sign of kidney trouble, it was a fact that almost invariably albumen appeared in it on the twenty-first day; thus following upon the desquamation of the skin. When scarlatinal dropsy was moderate in amount, there was, he thought, usually very little difficulty in promptly relieving the patient. Some of the microscopical points treated of in the paper also were discussed by Dr. L. J. MacNamara.

In some concluding remarks, Dr. Grauer said that in the cases referred to by Dr. Taylor, in which death occurred within twenty-four or forty eight hours, there was complete suppression of urine, and that the condition found after death was acute glomerulo-nephritis. In reply to Dr. Gouley's question he stated that while, in the majority of cases, the children undoubtedly recovered promptly, in a certain proportion of cases the kidney trouble became chronic. He had at present under observation a child 8 years old who had an attack of scarlet fever two years ago, and who was now, as a result of it, suffering from chronic interstitial nephritis, with bloody urine.

Professor Joseph D. Bryant presented a vermiform appendix which he said he had removed from a patient last summer. The case occurred in a neighboring town, and was seen in consultation with Drs. Janeway and W. T. Bull. The cause of the illness, which occurred in a gentleman 45 years of age, previously in good health, was entirely unknown.

About fifty hours before Dr. Bryant saw him he was suddenly attacked, without appreciable cause, with a moderately severe pain in the epigastric region. He attached but little importance to it, and, attributing it to a slight diarrhœa which he had had for some ten or twelve hours previously, took a mild cathartic, which afforded him marked relief. He noticed no pain or tenderness in the right iliac region.

About fifteen hours afterward the pain became more severe than at the outset; but was still located in the epigastrium. The family physician was called, and he prescribed another cathartic, followed by an anodyne. The medicine did not move the bowels, and the pain increased; while the abdomen now became tympanitic, and nausea, with occasional vomiting, set in. The vomiting, however, was not characteristic of any special morbid process. Enemata were administered, but seemed to dislodge only a few small scybalous masses. The condition of the patient became gradually worse, and Professor Janeway was called in consultation; arriving about forty-five hours from the first attack of pain. Five hours later he was seen by Drs. Bryant and Bull, and the following facts were noted: The patient's perceptions were intact, although somewhat blunted by the previous use of opium. Persistent, though not severe, nausea existed, with occasional vomiting. The matter vomited had no distinctive characteristics. The abdominal walls were extremely distended, with tympanitic resonance well marked in all situations. Hepatic dulness normal. Tenderness on pressure very general, but best marked at the lower portions of the abdomen. No isolated point of special tenderness was discovered, and all pain was still referred to the epigastric region. The abdominal walls were too tense to render deep palpation of any service as a diagnostic measure, and digital rectal examination disclosed nothing abnormal. Temperature 102; pulse 108. Respiration increased in frequency, but painless. Bowels obstinately constipated, with an absence of all intestinal sounds and of appreciable vermicular movements. The thighs were flexed. Urine drawn off with a catheter.

As the result of this examination the consultants believed, 1, that a more or less general peritonitis existed; 2, that it was secondary to either obstruction of the intestinal tract or perforation of it; 3, that immediate measures of relief must be taken to insure a chance for recovery; 4, that medicinal measures afforded no such chance; 5, that an exploratory incision of the abdomen was warranted.

The patient willingly gave his consent, and the operation was performed in as thoroughly antiseptic manner as the contingencies of the case would admit. As soon as the peritoneum was incised a very small amount of thin, non-offensive, reddish colored fluid escaped. The small intestines were extremely distended, and their serous surfaces were deeply congested. The sigmoid flexure (which extended across to the right iliac process) presented similar appearances. In some situations evidences of recent lymph were seen. No characteristic local indications of an obstruction could be found anywhere. The intestines at and about the right iliac fossa presented the evidences of a more profoundly inflamed condition, and for this reason the caput coli was closely examined. It, too, presented appearances similar to the contiguous intestines.

The vermiform appendix was then sought for and found, but with considerable difficulty. It arose from the inner and peritoneal surface of the cœcum, was about 2½ inches in length, and covered entirely by peritoneum, and was unattached, except at its origin from the cœcum. It was standing nearly erect between the intestinal folds, and was swollen and darkly congested; presenting somewhat the outline of a distended leech. At its base three perforations were found, two of which were each about the size of a small pea, while the other was of somewhat smaller size. In one of the openings was a small mass of fæcal matter. At and around the base of the appendix a considerable amount of the reddish, non-offensive fluid mentioned was found, and it was mixed with flakes of recent lymph.

The appendix was tied at its base, below the point of perforation, with a strong silk ligature, and removed with scissors. The abdominal toilet was performed with antiseptic sponges and a warm solution of bichloride of mercury (1–10,000). A drainage-tube was introduced, and the abdominal wound closed and dressed antiseptically. The patient rallied from the immediate effects of the operation, but died twelve hours afterwards from exhaustion.

In concluding his narrative Dr. Bryant called attention to the following special points of interest in connection with the case: 1, the preceding diarrhœa;

2, the absence of distinctive pain at the seat of the lesion; 3, the location of this pain in the epigastric region; 4, the comparative quiet following the first attack; 5, the existence of normal hepatic dulness; 6, the extension of the sigmoid flexure to the right iliac fossa; 7, the unusual arrangement of the vermiform appendix; 8, the absence of the evidence of any restricting inflammatory process; 9, the uncertainty attending the diagnosis of the exciting cause of the patient's condition; 10, the unusual means adopted for the relief of the patient. P. B. P.

PAROTIDITIS AND PREGNANCY.

TO THE EDITOR OF THE JOURNAL:

Dear Sir:—The following case is to me one of interest and rarity: Mrs. S., aged 29, three months pregnant, was taken with parotiditis. On the third day the swelling abandoned the parotid glands, and miscarriage followed. She has had four previous pregnancies, of which the first, third and fourth were normal. The second pregnancy miscarried, which was attributed to fright. Are there any instances in which metastasis from the parotid glands to the uterus has occurred with results like the above?—Very truly yours, J. FRANK PAGE, M.D.

MISCELLANEOUS.

OHIO STATE SANITARY ASSOCIATION.—The fourth annual meeting of the Ohio State Sanitary Association will be held in the Board of Trade Room, City Hall, Columbus, Ohio, on Thursday and Friday, Feb. 10 and 11, 1887. Among others the following papers will be read:

"The cause of deafness and blindness with special reference to the eruptive fevers." S. L. McCurdy, M.D., Surgeon for the Penna Co., Dennison, Ohio.

"Cremation of the lower animals." E. S. Rickets, M.D., Portsmouth, O.

"Water Closets and Privy Vaults." John McCurdy, M.D., Youngstown, Ohio.

"Injurious Gases." David O'Brine, M.E., M.Sc., M.D., Assistant Professor of Chemistry, Ohio State University, Columbus, O.

"Our Fever Epidemic from Drinking Sewerage." C. E. Kurz, M.D., Bellaire, O.

"The Sanitary Condition of Sandusky before and after the Completion of Water Works and a Sewerage System." Elwood Stanley M.D., U. S. Marine Hospital Service, Ohio.

"Syphilis from a Sanitary Standpoint." C. E. Beardsley, M.D., Ottawa, O.

"School Sanitation." Hon. LeRoy D. Brown, Ph.D., Ex State School Commissioner, Hamilton, O.

"Some of the Practical Results of our Criminal Laws from a Sanitary Standpoint." R. Harvey Reed, M.D., Mansfield, O.

"Diagnostic Responsibility." H. M. Lash, M.D., Athens, O.

"Examination of Air of Apartments." Curtis C. Howard, M.C., Professor of Chemistry, Starling Medical College, Columbus, O.

"Hygiene of the Sick-Room." F. C. Larimore, M.D., Mt. Vernon, O.

"The Sanitary Condition of the City of Mexico, from Personal Investigation." E. D. Shreve, C.E., Bucyrus, O.

"Ptomaines and Poisoning by Tainted Foods." J. U. Barnhill, B.S., M.D., Lecturer on Toxicology, Columbus Medical College, Columbus, O.

"The Relation of Climatic Changes to Certain Diseases, with chart illustrations." E. M. Mark, Esq., Sec'y Ohio Meteorological Bureau, Columbus, Ohio.

"The Chronic Insane under County Care and in the Care of Families." F. H. Darby, M.D., Chairman of Sanitary Committee, Morrow, O.

Reduced rates have been secured on all lines centreing in Columbus, and will be granted to all persons desiring to attend the meeting, who, on application to the Secretary, at least one week prior to the time of the meeting, will be furnished with the proper certificates, which *must* be secured before leaving home.

REGISTRATION OF BIRTHS AND DEATHS IN ILLINOIS.—In the city of Chicago the death reports are as complete as they can be made, owing to the burial permit system, but there are about one-fourth of the returns of births lacking. This is mainly owing to neglect upon the part of the profession, as the midwives as a rule make these returns promptly. An effort will again be made at the coming session of the General Assembly to so amend the law as to relieve the certifying physician of unnecessary labor in connection with these returns, and the Illinois State Board of Health cordially invites the exercise of influence to this end. The returns last year indicate an increase of 25 per cent. over the previous year, in consequence of a circular letter sent to the delinquents in February and March. It is to be hoped that all returns will be made promptly.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 25, 1886, TO DECEMBER 31, 1886.

Major Egon A. Koerper, Surgeon, U. S. Army, granted leave of absence for two months, to take effect about January 1, 1887. S. O. 297, A. G. O., Dec. 27, 1886.

First Lieut. Jno. L. Phillips, Asst. Surgeon, granted one month's extension of his leave of absence. S. O. 297, A. G. O., Dec. 27, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING JANUARY 1, 1887.

Anderson, F., P. A. Surgeon, to U. S. S. "Thetis."

Auzal, E. W., Asst. Surgeon, detached from R. S. "Independence" and ordered to Coast Survey Str. "McArthur."

Green, E. H., P. A. Surgeon, detached from Naval Laboratory for temporary duty on R. S. "Independence."

Gatewood, J. D., P. A. Surgeon, to Naval Academy, Jan. 5, 1887.

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ADDRESSES.

STATE REGULATION OF MEDICAL PRACTICE.

The Retiring President's Address, delivered at the Tenth Annual Meeting of the Detroit Medical and Library Association, Oct. 4, 1886,

BY C. J. LUNDY, A.M., M.D.

Ladies and Gentlemen, Members of the Detroit Medical and Library Association:

We are assembled this evening to celebrate our society's tenth anniversary, and, I trust, the year about to close has been one of pleasure and profit to us all. When one year ago you conferred upon me the honor of the presidency of this society, I accepted the office with doubt and misgivings. The year preceding my installment in office had been one of unusual activity and prosperity. Such prosperity has seldom been enjoyed by a local society, especially outside the large cities of the East. Numerous valuable papers had been presented; interesting discussions, upon given topics, had been held, and a large amount of pathological material had been exhibited during the year. The membership of the society had greatly increased and the regular attendance had been unusually large during the incumbency of my predecessor. No wonder, then, that I should have entertained fears lest the year during which I was to preside over your deliberations might witness a diminution in the interest and good work of the society. Still, I was in no small degree encouraged by the fact that we had an indefatigable secretary, to whom this society owes so much, and also by the fact that we have a large number of members interested in society work—members who had large resources from which to draw—and I think you will agree with me when I say they have drawn upon these resources most generously, and they have made this another prosperous year for this society. Such work as you have done during the past year could not fail to prove interesting, profitable and instructive, and it is somewhat surprising that so many busy practitioners have found it possible to devote so much time to society work.

According to the secretary's report, I find that there were read during the year twenty-three papers on numerous and interesting topics. There were held five discussions upon various subjects, mostly chosen by the advisory council. More than seventy pathological specimens and microscopic mountings were presented. A large number of patients was exhibited, either to illustrate some interesting disease, or to show the results of some important surgical operation. Indeed, the number and character of the pathological specimens alone would have done credit to a pathological society. I doubt if any local society in the country has done more profitable, interesting and instructive work during the year than has the Detroit Medical and Library Association.

In addition to the many valuable papers presented by our resident members, we have had the pleasure of listening to able papers from several gentlemen residing outside the city. Among others were one by Dr. T. K. Holmes, President of the Canadian Medical Association; one by Prof. V. C. Vaughan, of the State University; one by Dr. Henry M. Hurd, Superintendent of the Eastern Michigan Asylum; one by Dr. George Tye, President of the Ontario Medical Society; and one by Dr. E. P. Christian, President of the State Medical Society. While the inviting of eminent men outside the city to read papers before us is not exactly a new departure, yet it has been done to a much greater extent this year than heretofore. In my opinion it is a good course to pursue, and I am sure all will admit that we were both entertained and instructed by the able papers presented by the gentlemen named. We have also been delighted and encouraged by the frequent presence of gentlemen, prominent in the profession, who are not members of this society. Many of these are either officers of, or prominently connected with, sister societies, and their presence at our meetings has always been a source of great pleasure to me.

Our society has increased its membership by the election of thirty new members. Of these nineteen were elected as active members, ten as corresponding members, and one was elected as an honorary member. We have now a total membership of 136. It is possible that some may contend that a society with a large membership may prove unwieldy, but I certainly do not entertain such views. Instead of having a few members present, we have had an average attendance of thirty one. On several occasions the attendance has been between forty and fifty. When so many gentlemen interest themselves in society work, it may be relied upon that the meetings will be of interest and profit to all concerned. I have attended most of the meetings during the year, and I have no hesitation in saying that I always went away feeling I had been instructed by the papers,

discussions and reports of cases. I doubt if this unflagging interest could have been kept up throughout the year were our society a small one.

Now, while our society has done much good work during the year, and while we have had interesting discussions, interesting reports of cases, interesting pathological specimens, and interesting and valuable papers, yet I think our society might do other valuable work, and might wield its influence to remedy an evil which has grown to great proportions, and which has done great harm in our commonwealth. It is an unfortunate fact, but fact it is, nevertheless, that in Michigan the ratio of quack doctors to the population is greater than in almost any other State. It is a well-known fact that in other States Michigan is regarded as the asylum of quacks. It is a well-known fact that when a law is about to be enacted against quackery in other States, the charlatans of those States turn their eyes towards Michigan as a land flowing with milk and honey—a land in which they will find protection, and where they may pursue their nefarious business without let or hindrance. In our State any man, no matter how ignorant, no matter how illiterate, no matter how unskillful he may be, any man, I say, may undertake without let or hindrance to cure all ills to which human flesh is heir; may undertake to treat any disease or to correct any deformity of the human form divine.

In this great State of Michigan, in which we have such a grand system of public instruction, such fine educational institutions, such fine facilities for obtaining an education, whether lay or professional, it is a disgrace to see men and women, without any preparation, or training, or qualification whatever, setting themselves up as physicians, and through false pretense swindling our citizens out of enormous amounts of money. It is generally well known that the charlatans of this State rob and beguile the unwary with a merciless hand, and that the amount of money which is annually filched from our people by these swindlers is very large. But I am satisfied that few even of you, ladies and gentlemen, could form an approximate estimate of the amount of money which is taken yearly by the wily and unscrupulous charlatans of this State. In my presidential address before the medical alumni of the State University (extracts from which I have embodied in this paper) I took occasion to refer to the "Medical Practice Act" of Illinois, and upon that subject I made the following quotation from the writings of ex-Governor John M. Hamilton:

"The Medical Practice Act was primarily a police regulation. Incidentally it was educational. Primarily the purpose of the law was to rid the State of incompetent, ignorant and dangerous mountebanks and quacks, who were carrying on a fraudulent and nefarious business by all manner of deceit in a pretended practice of medicine among the people. It was to protect the lives, the health, the morals and the property of the people of the State from the shameless depredations of swindlers and adventurers who, by all manner of false representations and deceptive promises, were taking advantage of the misfortunes of the people in sickness and ailments of all kinds, to still further injure their health, endanger their lives and rob them of their money."

To me it is incomprehensible that in Michigan all attempts to regulate the practice of medicine, to suppress quackery and to protect the people from the depredations to which Gov. Hamilton has so forcibly referred, have been practically unavailing. We boast of the intelligence of our people and of our educational facilities, and it would seem that there is some foundation upon which to base these claims. But if we are to judge of the intelligence of a people by the laws which they enact for the protection of their rights, their property, their health, their morals and their happiness, we must admit that the people of this commonwealth lack the intelligence to grapple with one of the most important questions of our time. In every State there is a law against obtaining either goods or money by false representation. Indeed, it was only a few days since that a culprit was brought to justice in one of the towns of this State because he represented the circulation of a small paper to be much larger than it was in reality. However, a man may pretend he is a physician, and in this guise he may swindle and rob the people of this State with impunity, and there is no law to prevent him. If, as Gov. Hamilton has said, the people of Illinois found it necessary to enact a law "to protect the lives, the health, the morals and the property of the people of that State from the shameless depredations of swindlers and adventurers who, by all manner of false representations and deceptive promises, were taking advantage of the misfortunes of the people in sickness and ailments of all kinds, to still further injure their health, endanger their lives and rob them of their money," why should not Michigan, with her boasted intelligence, be ready and willing to afford her citizens similar protection and enact similar laws? Laws to suppress quackery have been enacted in other States, and we see that the people of Iowa, of Wisconsin, of California, of Mississippi, of Alabama, of North Carolina, of Virginia, of New York, and of other States, have cried out against quacks and charlatans, and the law-makers of these States have had the intelligence to give the citizens of their respective States that protection to which all civilized communities are entitled. Can it be possible that our boasted intelligence is only a myth, and that after all the citizens of Michigan are intellectually inferior to the people of other States? If it is the will of the people that we should, in the space of three years, pay out to swindling mountebanks and quacks as much money as would pay for all the school houses and school property in this great State of Michigan, then must we answer the question in the affirmative. But I, for one, do not believe it is the "people's will" that this condition of affairs should exist within the borders of our fair State. I believe the fault lies elsewhere. I believe that if this monster were shown to the people in a proper light they would rise up as one man and crush it. Can the fault be charged to our legislators? Can it be possible that the men who represent us in the legislature of this State are not a fair criterion by which one can judge of the intelligence of our people? Or can it be possible

that the majority of these legislators have venal motives in casting their votes when the interests of the people are at stake? And can it be possible that the chief of a corporation of quacks spoke truly when he said he had "fixed the legislature and defeated the medical bill, but that it took money to do it?"

Let the fault lie where it may, one thing is certain, and that is, the State of Michigan has thus far utterly failed to grant to her citizens that protection from swindling mountebanks and quacks which she is in duty bound to afford them. Michigan should learn wisdom from other States; and her legislators should show that degree of intelligence which was shown by the legislators of Illinois, when they passed the "Medical Practice Act" nine years ago. It is true, a pretence for a bill against quackery became a law at the last meeting of the legislature. This law is an utter failure, and for the following reasons: First, it did not contemplate the prevention of quackery within the State, because it was not intended that it should interfere with the nefarious business of the quacks already here. Second, because all manner of men have been allowed to register under the law. We find that not only druggists and others who had not been heretofore engaged in practice, but still others, who thought they might desire to practice medicine at some time in the future, have enrolled themselves, and in the eyes of our farcical law they are your equals. Third, the law is a failure because it has not been enforced, except in a single instance. To-day the people of Michigan are as fully at the mercy of the relentless charlatan as they were a quarter of a century ago.

The passage of the "Medical Practice Act" in Illinois forced about three thousand charlatans to quit their nefarious business or leave the State. After nine years' experience with this great and good law, we see that there are nine hundred fewer physicians in the State of Illinois than there were when the law was enacted nine years ago, while the population of the State has increased nearly one million within that time. To reduce the matter to a mathematical calculation, let us suppose that the average amount of money which each of these swindling quacks succeeded in filching from his dupes was $2,500 per annum. By many this will be considered too small an estimate, for many of them spent money lavishly in advertising their business. Now, multiply the $2,500—the sum which each obtained—by 3,000—the number of quacks forced to leave the State—and we get the sum of $7,500,000 which has been saved in one year. Let us again multiply this by nine—the number of years the law has been in operation—and we find that $67,500,000 have been saved the people of Illinois by the passage of this law regulating medical practice within the State.

Let us apply this mathematical calculation to our State. The population of Michigan is equal to one-half that of Illinois. Upon that basis we have 1,500 quacks in this State. Indeed, it is probable that the number is considerably greater. There are at least 1,500 men and women in Michigan who pretend to be physicians, but who have no qualifications for the profession which they pretend to practice. Upon the same basis of calculation which applied to Illinois, the people of this State have been robbed of more than $37,000,000 within ten years, or $3,750,000 annually.

Thirty-seven and a half million dollars, the amount of money of which we have been robbed in ten years, is three times greater than the entire cost of all the school houses, high schools, academies and colleges of this State, even including our State University. Thirty seven and a half millions of money is equal to four times the cost of erecting all of the penal, pauper and charitable institutions of Michigan, even including the three asylums for the insane. Thirty-seven and a half million dollars would cover the cost of erecting all the church edifices in the State. One-third the money which is annually paid to the quacks would build and equip all the hospitals in the State, and one-tenth of that amount would cover the cost of maintaining these hospitals. One fifth of the money annually filched from our people by these charlatans would maintain a large free hospital in every town in the State having a population of 5,000 or over. The money of which the citizens of Michigan are annually despoiled by these wily quacks would pay the yearly salary of all the teachers and professors in our public schools, normal school, agricultural college and our State University. One-half the money of which the people are yearly robbed, because our legislators have failed to give them protection from a horde of swindling mountebanks, would more than pay the salaries of all the clergymen in the State.

I have said that few even of you had formed a correct estimate of the appalling condition of affairs which exists in this State. To me the study of the question has been a series of surprises, and in more than one instance have I doubted my own figures. I am quite certain that few, or none of the laity have any correct idea of the extent to which a sort of licensed robbery is carried on in this fair State of Michigan.

Now comes the question of prevention. Many physicians will say, it is none of our business; if the people are willing to be swindled by these fellows, it matters not to us; if the people will not avoid these mountebanks, let the people suffer for it; if the people cannot choose between properly educated physicians and those who are mere pretenders, they should bear the consequences; if the people will not learn to avoid the charlatans who put forth glittering advertisements, and who try to dupe them by all manner of false promises, they, the people, should pay the penalty. I well remember hearing one physician say: "So and-so's advertisement sends me many patients who would not think of consulting a doctor had not the advertisement frightened them." All these things indicate a niggardly, uncharitable, unphilanthropic spirit, and they show such physicians to be unworthy their noble calling.

The business of most physicians is unaffected by the presence of the charlatan, because the victims of the latter are largely those upon whose imagination and credulity he can play. One of the princes of this class of swindlers held forth in this city not long

since, and he admitted to an acquaintance of mine that he "did not pretend to cure people," he "preferred to humbug them, as it paid best." This wily quack must have robbed the people of Detroit and vicinity of several thousand dollars in a few weeks.

In every town in this State you will find physicians coöperating with the State Board of Health to enlighten the people, and trying to protect them from influences which tend to produce sickness and death. And to the honor of these noble men and true physicians, these true friends of humanity, who compose our State Board of Health, be it said, they have done much to enlighten the people, to warn them of the dangers which surround them, and to instruct them as to the best means of guarding against many of the preventable diseases. So, also, our Board of Health has done an invaluable service to our city, not the least of which has been the instruction of our citizens regarding the importance of sanitary measures, and the best means of limiting the spread of contagious diseases.

Who will say, then, that the medical profession, as a whole, not only those of the regular school, but also the homœopathic brethren, should not unite as one body of teachers, to instruct the people of this State regarding the importance of a law which, in the words of Gov. Hamilton, "will protect the lives, the health, the morals and the property of the people of the State." I maintain it is the duty of the medical profession to point out to the people the dangers which surround them. I maintain it is the bounden duty of every true physician to use the power that in him lies, to alleviate the sufferings and right the wrongs, protect the lives, the health, the morals and the property of his fellow beings, and to warn the community in time of danger. I believe that this, the largest local society in the State, could render valuable assistance in bringing about a much needed reform in medical practice in Michigan. If the Detroit Medical and Library Association would take the first step in enlightening the public, I think other medical societies would follow their example.

We should have a law prohibiting all non-graduates of respectable colleges from practicing medicine until they had passed a satisfactory examination before a State board of examiners, similarly constituted to the State board of examiners in pharmacy. After the enactment of such a law, no man, whether a graduate in medicine or not, should be allowed to commence the practice of medicine in the State until he had passed a satisfactory examination before the State board of examiners. Such a law is in force in Virginia, Mississippi, and other States, and it works well. Such a law tends to make medical colleges more careful in regard to graduating incompetent men. For my part, I would like to see a law in Michigan which would compel all candidates for a medical degree to go before a State board of examiners, which board should be entirely independent of the medical colleges in the State.

It may be difficult, it may even be impossible, for us to enact in this State a law which will afford the people all the protection to which they are entitled, but if we can arouse public sentiment upon this question, much can be accomplished. The public press is the great moulder of public opinion, and if we can call this powerful engine to our aid, we can accomplish what we desire. As an evidence of the influence of the press we are reminded that one of the newspapers of this city actually drove out of existence the "Skuce Thomas" bogus medical college and diploma mill which began its nefarious business here a few years ago. If the public press of this city and State will come to our aid, we can have enacted in Michigan a law which will rid her of her mountebanks and quacks, a law which, in the words of Gov. Hamilton, will "protect the lives, the health, the morals and the property of the people of the State from the shameless depredations of these swindlers and adventurers."

ORIGINAL ARTICLES.

A CASE OF CHRONIC PSEUDO-MEMBRANOUS BRONCHITIS.[1]

BY H. A. JOHNSON, M.D., L.L.D.,

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Pseudo-membranous bronchitis is rarely met with. In making this statement I exclude the persistence of a diphtheritic bronchitis and croupous pneumonia, in both of which diseases the expulsion of false membranes may occur. It is, perhaps, not always easy to make an absolutely correct differential diagnosis of these cases. This difficulty rests upon the fact that (1) membranous inflammation of the bronchii of an acute character, such as diphtheria, may become chronic. I have seen several such cases, but in all of them the acute stage had been well marked, and the chronic condition seemed to be only delayed convalescence. (2) Croupous pneumonia may certainly become chronic, but so far as my own experience enables me to judge, the membranous exudate, if present, disappears with the acute stage.

The literature of the subject is quite voluminous in titles, as may be seen by reference to the index catalogue of the library of the Surgeon-General's office, but the number of cases is small.

Among the cases reported in our own country, one by Dr. W. C. Glasgow, of St. Louis, in a paper read before the American Medical Association for the year 1879, is especially noticeable. In this article the author embodies the experience of several of the more prominent physicians of the United States.

Dr. Richardson, of New Orleans, "in a practice of nearly a third of a century" had "never encountered a case of plastic bronchitis."

Dr. Geddings, of Aiken, South Carolina, had "never met with a case." It should be remembered that Dr. Geddings had a very large experience in lung troubles.

Dr. F. R. Porcher, of Charleston, had seen one case.

Dr. T. G. Simons of Charleston, had seen one

[1]Read before the Chicago Medical Society, December 20, 1886.

case, and had known of three others in the practice of other physicians.

Dr. Jerome Cochran, of Mobile, says it is unknown in that section of the country.

Dr. James H. Hutchinson, of Philadelphia, had seen one case.

Dr. H. I. Bowditch, of Boston, had never seen a case.

Dr. R. H. Fitz, of Boston, had seen four specimens of casts. Does not seem to have seen the patients.

Dr. T. Parvin had seen no cases.

Dr. Geo. P. Andrews of Detroit, had never seen or heard of a case in that region.

Dr. Roberts Bartholow had seen one well-marked case.

Dr. J. R. Leaming, of New York, had seen, in consultation, two cases.

Dr. Austin Flint, Sr., had seen three cases.

Dr. Gleitzman, of Ashville, North Carolina, had seen one case.

Dr. J. M. Da Costa, of Philadelphia, had specimens of casts from five cases; cannot say whether he had seen more cases.

Dr. Alfred Statle, of Philadelphia, sent report of one case.

Dr. P. E. Robinson, of St. Louis, reported one case.

Dr. Maxwell reports one case.

Dr. Samuel G. Armor, of Brooklyn, had seen "a few cases."

Dr. Frank Donaldson, of Baltimore, had seen one case.

Dr. Henry Gibbons, Sr., of San Francisco, had never seen a case during a practice of fifty years.

Dr. Charles Denison, of Colorado, had never seen or heard of a case in Colorado.

Dr. Baumgarten, of St. Louis, reports one case.

These facts collected by Dr. Glasgow in 1879, perhaps fairly represent the experience of the profession in America. I am, however, inclined to think that these meager statistics of the practice of some of the most active physicians and careful observers by no means give a correct estimate of the relative frequency of the affection. I imagine very many cases are never diagnosed, or if seen and recognized they are not recorded, and therefore lost sight of.

In the records of the literature upon this subject there are reports by L. H. Angel, *Chicago Medical Journal*, 1859, pp. 501 to 504.

J. S. Cohen, "Transactions of the Pathological Society," Philadelphia, 1876.

Austin Flint, Sr., *Medical Record*, 1874.

J. H. Hutchinson, "Transactions of the Philadelphia Pathological Society," 1874.

A. L. Payne, *Stethoscope and Va. Medical Gazette*, 1852.

J. C. Reeves, "Pathological Society," Philadelphia, 1859.

P. G. Robinson, *St. Louis Medical Journal*, 1878.

S. Rogers, "Transactions Medical Society of New York," 1866.

L. Smith, *Medical Record*, 1872.

T. H. Streets. *American Journal Medical Sciences*, 1880.

E. D. Worthington, *Canada Medical and Surgical Journal*, 1876.

These, in addition to the case reported by Dr. Glasgow, comprise all the titles I am able to find in the United States and Canada. They evidently include also some of the cases referred to in the correspondence reported by Dr. Glasgow and briefly summarized above. In some of these cases it seems to me there was simply an acute or diphtheritic inflammation running its course in a few days and terminating in death, with such symptoms as are seen in the ordinary forms of diphtheritic inflammation.

Among foreign authorities the reports are also meager. Eichhorst, in the last German edition of his work on special pathology and therapeutics, finds only 100 cases on record. The article in Ziemssen's Encylopedia gives a very clear statement of what is known as to the etiology and pathology of the affection. Among other writers Cheyne thinks old age predisposing; Valleix doubts this. Gintrac says that the larger number of cases are observed in adult life. If we exclude the cases of diphtheria extending to the bronchii, this is true.

The male sex is predisposed to the affection according to most authorities. Enfeebled health from previous disease, poverty, fatigue, exposure, are among the most common causes noted. Of course all these are so many synonyms for ignorance. The cause remains to be discovered. It may be some local colony of parasites. The relation of this disease to the ordinary forms of membranous inflammation in some of which bacteria are believed to be a pathogenic factor suggests this, and perhaps makes it probable.

The relations to antecedent disease are by no means constant; neither diphtheria, nor simple bronchitis, nor pneumonia, except in rare instances, eventuate in chronic pseudo-membranous inflammation of the bronchial tubes. Rugel says, "a special predisposition, or the influence of some special unknown agency is always essential in addition" to the hypothetical causes enumerated.

The pathology of the affection is better understood. There is an exudate which coagulates upon the surface of the mucous membrane. This is often laminated by successive deposits. In the meshes of this coagulum a few leucocytes are found. The membrane proper is not necrosed, but continues to produce epithelium and the exudate is pushed off by the multiplication of this epithelium which in turn degenerates, becoming fatty and purulent. It seems also to be certain that while the mucous membranes do not become the seat of necrosis they do become the seat of morbid processes, possibly similar to that which in the endothelium of blood-vessels determines the formation of a thrombus, and which in this case determines the formation of the plastic deposit.

The patient in the case which I beg to report is G. T. P., aged 37 years, a native of the eastern shores of the Adriatic. The family history on both sides is good. He enjoyed good health as a child and during early manhood; at 17 had a suspicious sore, but apparently escaped any other manifestations of specific disease; was for several years a sailor, but

abandoned that calling at the age of 25. Has been for some years keeping a saloon. Eight years ago he gives a history of pneumonia involving the right lung; was six weeks ill. His general health from that time was good, till in March, 1884, when he "caught cold." At that time he was in bed ten days, had cough with expectoration, but does not know what was the character of the matter expectorated; had pain in the right side, locating it in the mammary region, this was not severe, but it continued more or less at intervals to the time of consultation. The cough and expectoration also continued during the spring and summer with, however, upon the whole a slow improvement till four days before first seen, when he thinks he caught cold, cough became more troublesome and he spat up once only a little blood. He consulted me on August 23, 1884.

I found him a well built man, 5 feet 7 inches in height, dark hair and eyes, weighing when well, 147 pounds, but now evidently much reduced, 125 to 130 pounds. He stated that he had lost his weight since last winter; his appetite was poor; bowels torpid; urine normal in quantity but high in color; pulse 75, temperature 99.3, respiration 17 per minute, sleep fair, tongue coated. The cough and expectoration led him to fear phthisis, and the consultation was had with the expectation that there would be found evidence of that disease.

Upon inspection the chest was found to be noticeably flattened, but not more so on one side than on the other; over the right side and especially in the mammary region vocal fremitus exaggerated. Upon percussion there was found dulness over the whole right side, the left side normal. Auscultation revealed bronchial expiration over superior portion of right side, front and back. Left side normal. Cardiac sounds normal. The diagnosis then entered in the case book was a "pneumonia not completely resolved, with bronchitis." He was placed upon tonics, syrup hypophosphites with hydrobromic acid.

September 9. Seventeen days later, he came again, and in every respect seemed to be better. No physical examination was made, but he was ordered to continue the medicine.

September 16. After quite a severe coughing fit and the expulsion of a mass of what was found to be a cast of a large bronchus, he spat blood. The hæmorrhage persisted, and he was ordered extract ergot in capsules, and to continue the syrup hypophosphites and acid hydrobromic. The diagnosis was corrected so as to read "chronic pseudo-membranous bronchitis."

September 23. Bleeding continued two days after last visit, none since. Has had a great deal of pain in the inter-scapular region, not more on one side than the other. At times very tender to the touch at right of the eighth dorsal vertebra. This he describes as a "soreness." Has expectorated thin pieces of membrane since last consultation.

Physical examination. Find no dulness over the right side, or as the record says "no noticeable difference in the percussion noted on the two sides." This was one month after the first examination, when there was dulness over the whole of the right side. The breath sounds over the right side feeble, in every other respect normal. Pulse 68, temperature 98.6.

October 2. Had been doing well until yesterday, when he again coughed up a large cast of a bronchus. (I may remark that all of these which I saw were probably from the first and second size tubes, and were from two to four inches in length.) After this there came what he describes as pus streaked with blood, but the hæmorrhage not copious. The ergot had been stopped; he thinks he was better while taking it and asks to be permitted to return to it.

October 17. The casts continue to be coughed up; microscopically they consist of coagulated plasma with a few leucocytes. Since the last date, October 2, he had been taking balsam copaiba and oleores, cubeb, with the ergot. I was under the impression that the copaiba had increased the plasticity of the exudate. Keeping in mind the specific history in his early life I thought possibly that there might be some lingering impression still. I therefore put him on pot. iodid. 0.50 t. i. d.

October 25. Casts continue almost daily; continue pot. iodid. and add hydr. prot. iodid. 0.01 t. i. d.

November 5, his wife comes to the office, says that he has thrown off a large number of casts, and each is followed by copious hæmorrhage. Has continued to take the ergot, and is now a little better but weak; continues pot. iodid. and hydr. prot. iodid, and in addition R elix. calisayæ 450. and acid. sulphur. arom. 50.00 grams, M. and take a dessert-spoonful in water three times daily.

November 21, patient comes himself. Has been better since last date. Has had no hæmorrhage, or but little. Still a few casts, appetite has improved under the tonic. Bowels regular and sleep good.

December 26. Has been doing well till recently, but is now evidently losing in weight and strength. Hæmorrhages from chest and occasionally from nose. Appetite poor. Bowels regular. or occasionally diarrhœa. This. however, does not persist. Has lancinating pains in the abdomen, more in the epigastric region. Coughs up very few casts, and these very thin and delicate. Has taken now the hydr. prot. iodid. since the 25th of October, 0.01 three times daily, and a part of the time 0.50 pot. iodid. He has also taken, according to the amount of hæmorrhage, ergot at his own discretion. Stop both ergot and hydr. prot. iodid. and take syr. fe. iodid. 1.00 t. i. d.

January 9, 1885. Has been feeling better for the last two weeks. Appetite fair, bowels regular, no more pains in bowels since change in medicine, cough less, expectoration mucus, occasionally tinged with blood. No free bleeding and no casts. Has some pain in chest, bilateral, and not marked at any one place. Pulse 78, temperature 98, respiration normal. During the last week in January his wife came, said that he was still coughing a little and that the expectoration was streaked with blood. I directed an emulsion of oleum terebinth., each dose containing 0.50 of the oil, three times daily, and to omit the ferri iodid.

February 4, he was visited at his home. He has expectorated no casts since December 26, 1884, but

continues to cough sputum streaked with blood, and occasionally very slight epistaxis. Is still taking the turpentine; thinks the cough is looser than when taking the iron. During the past week has had a good deal of pain, intermittent in character, in the lower half of the right chest; has been in bed for last three days because of this pain.

Upon examination find the motions of the lower right side restricted; on percussion, dulness over the lower third of right lung, line of dulness seems to change with change of position; breath sounds indistinct, voice sounds exaggerated. Friction sounds distinctly heard over anterior portion of chest when patient lying on back; less so when patient is sitting up. Diagnosed, pleurisy, question of effusion doubtful; a hypodermic needle was introduced with negative results. Chest was ordered to be painted with iodine. The turpentine was continued.

Dr. Frank S. Johnson, to whom I am indebted for the larger portion of these notes, had made this visit, and on his return from the patient, in the extreme northwestern part of the city, became seriously ill. I was unable to look after the patient, and I asked my friend, Dr. S. D. Jacobson, to take charge of the case. This was, I think, on the 5th of February, 1885.

I beg to add extracts from a letter from Dr. Jacobson, giving in a general way the further treatment of the case:

"As to my ideas about the therapeutics of this case I can be short. I am not troubled with an *embarras de richesse*, but rather find my excuse in the old saw, *simplex sigillum veri*.

"The case was to me one of great interest, having never seen a similar one in twenty-five years of practice, and finding little or no mention of such cases in the books at my disposal. True, I have had one case of bronchial croup, which terminated fatally in a couple of days (a man about 48 years old). But your case had already been under your care and observation for several months before I saw him.

"During the earlier months of my attendance he was about the same as when you saw him, intensely harassing cough with dyspnœa until relieved by the expulsion of greater or smaller masses of bronchial casts, which relief was generally paid for by severe hæmorrhages, which told on the little strength he possessed before, so that he not only dwindled down to a skeleton-like appearance, but when able to sit up his legs would not support him, and his hands grew so weak that he could not for some time lift the spoon to his mouth. During the summer of 1885, he improved some, but the fall and winter reduced him below his former level.

"Having no authorities to guide me in the treatment of such a rare case, I applied the general principles to the best of my abilities. I had two indications before me, (1) *indicatio symptomatica*, and (2) *indicatio morbi*. As to the first class, I had in view the cough, dyspnœa, hæmorrhages, weakening of all the organs and functions. Those I tried to meet by the exhibition of *solventia*, *expectorantia*, *narcotica*, *styptica et roborantia*. As to the *indicatio morbi* I was more in the dark, knowing almost nothing about the pathology or etiology of this disease. But I reasoned like this: Since our pathology seems to drift more and more into bacteriology, it is but just that our therapeutics follow suit and be more in the nature of bactericides and antiseptics. In this light I wish you to judge my prescriptions containing such poisons as arsenic, iodine, bi-chloride hydrarg. and iodoform, which appear in many of them.

"I must confess that my success was a great deal more than I dared hope for, and though I firmly believe in the *vis medicatrix naturæ*, I also believe that a physician can be, and should be in the words of Lord Bacon, '*medicus naturæ minister et interpres.*'"

During the summer of 1886, and again within the last few weeks, I have seen the patient, and find him perfectly recovered.

4 Sixteenth Street.

THE PROFESSION AND PRACTICE OF MEDICINE

In Some of Its Relations to Human Society.[1]

BY S. M. HAMILTON, M.D.,

OF MONMOUTH, ILL.

This is a subject of great width, in its entirety. The history of medicine may be very appropriately included in the investigation, as well as an almost interminable biographical account of its representative members. But at present we will only try to give a few suggestions: first, as to the mutual relations between the profession of medicine, as a profession, and the public; second, as to the true *status* of the individuals who pretend to practice it.

The healing art, as it is sometimes called, is so old that no one can tell when it originated. It is quite probable that, with the exception of the priestly office, and those occupations and professions growing directly out of man's physical wants, it is the most ancient of all. I cannot tell whether it was from the first a part of the priestly office to minister to the ills of the body as well as the soul. But it is a fact that what we call the "historical era" found the profession and practice of medicine wholly in the hands of the priests. The Mosaic Law sets it down as a part of the priestly office, and the cure of disease through religious rites and ceremonies is a part of the Jewish creed. These rites and ceremonies, we are expected to believe, and do believe, were conditions to cure, enjoined by the Almighty. But curiously enough, coupled with them in all cases are certain things which the afflicted person must do for himself, to secure the result desired. There are instances, to be sure, of miraculous cure of disease, where the means employed seem to have no rational connection with the result. But, as a rule, there is laid down to the patient a set of rational sanitary laws, which he must observe just as rigidly as the religious rites of the priest.

The rite of circumcision was instituted as a sanitary necessity, beyond doubt; and it was made a part of the religious code of the Jews, merely to insure its observance. The evidence is conclusive that venereal and syphilitic disease existed to a prodigious

[1] Read before the Monmouth Medical Club, October 6, 1886.

extent among the ancient Jews. There cannot be found in the writings of Ricord or Hunter a more vivid description of these forms of disease than that set down in the Levitical law. Clearly this physico-religious rite was instituted for the purpose of controlling and restricting (as it does to some extent) the spread of this terrible disease, which we now call syphilis.

I do not know why the all-wise Creator did not reveal to his chosen people the knowledge of drugs useful in medicine and the different modern surgical appliances, for the relief of his suffering children. We only know that he did not. I presume that, in the plan of the universe, it was best that man should be required to do for himself everything which lay within the compass of his own powers of mind and body. Considering the status of the healing art in these far off days, and for many succeeding ages; the prominence which faith in mere forms, and otherwise meaningless ceremonies, held in the cure of disease, it is easy to discover the key to many problems in mental philosophy which have sorely puzzled some of us in modern times. Mental lopsidedness is a subject of heredity as much as an ill-shaped leg or a crooked nose. Mental characteristics of any and every kind descend in long lines from parents to children, quite as often as physical peculiarities of form. It is not wonderful, then, that exaggerated ideas of the power of "faith without works," charms and meaningless ceremonies, and superstitious rites, as agents in the cure of disease, should have been bred into the mental and moral texture of the race.

We see every day intelligent men, who manage their family and pecuniary interests, their political and religious affairs, with the utmost sagacity and good common sense. In these, as in every other thing touching their duties to God and man, they will be satisfied with nothing less than a good sound reason for the adoption of any proposed line of conduct. Not all, but many such men, when brought face to face with disease, in themselves or in their friends, are satisfied with nothing that looks like reason. Something supernatural, something outside the domain of human reason, alone will satisfy them. In their mind "the seventh son of a seventh son," no matter how ignorant or inexperienced, has peculiar adaptability to the cure of disease; that this or that individual is endowed by the Creator with the power of healing by touch of the hand; that faith, and not works, is the healing power for all earthly diseases. The "prayer cure" of disease is one of the delusions which seems to have fast hold of the convictions of many good ignorant people. If there is one thing clearly taught in revelation, and shown by the light of experience and reason, it is that God helps those who help themselves. He has given to mortals brain, bone, and brawn, by the proper exercise of which he is required to provide for his natural wants. Food and raiment come to him by the "sweat of his face." Every material good, every creature comfort, every intellectual pleasure or triumph, is obtained only in one way—by paying the price, in human effort or human anguish, which the God of nature and grace has set upon it. Even spiritual blessings, and all of the many things affecting the immortality of man, are no exceptions to this rule. All are obtained by the blessing of God upon human effort. "Faith without works" occupies the same contemptible place in the cure of disease, which it holds in the salvation of the soul. In both cases "faith without works is dead."

I do not lose sight of the fact, for it is a fact, as well authenticated as anything in history, that the God-Man, whilst on earth, miraculously healed the sick, and conferred the gift upon certain of his followers. Evidently it was the purpose to convince the wicked world of his divinity, and to show the depth of his sympathy for human suffering. But the Great Physician and his coadjutors have retired many ages ago, and left us to cure our own diseases, and even to work out our own salvation, with fear and trembling. I know of no promise of the salvation of the soul without the concurrent work of the soul itself.

The mission of the medical profession, in the minds of many good people, is to discover and present to the world a set of specific remedies for all the ills of the human body. That disease is a fixed and unvarying quantity, is assumed. The truth is that, even in most cases of what we call "acute diseases," the causes have been operating for months, perhaps for years, and the exact form of local manifestation was brought about by some seeming trivial and so-called accidental circumstance, such as exposure to cold, or great heat, or exhausting fatigue, although the remote cause had been operating in the general organization for months or years. In cases of death from local disease, post-mortem investigation often establishes the fact that not one, but several, sometimes all of the vital organs, were implicated, making it difficult to tell, even by careful examination, which was the original and which the secondary affection. Disease in general has been defined "a deviation from health." A good definition, as a short answer to an apparently plain question, but utterly worthless as an answer to an abstract question. It would have perfect mathematical correctness, if the term health could have a fixed, standard value. But it has not. Really, what is health in one, is a condition of disease in another; and as no two human faces, nor no two human voices, are exactly alike, so are there no two human organizations whose physical construction, or whose organic operations, are exactly alike. The definition is true, but it must be restricted to the single physical organization in question, and no other. So long as mankind is born into the world with diverse temperaments, and hereditary weaknesses and hereditary vigor peculiar to themselves; so long as some are rich and some poor; so long as vice and crime walk side by side with honesty and virtue; so long as ignorance and filth shall have their kingdom within the kingdom of intelligence and cleanliness—just so long will the treatment of disease by specific medication be a failure.

The natural sciences as applied to the investigation of disease are of immense value, but their usefulness is bounded by barriers which they cannot pass. As an illustration, take the human eye. It is a purely physical machine, for appropriating and condensing the rays of light, and transmitting to a background

the color, shape, and comparative size, of objects within a certain radius. Its construction can be exactly imitated. The form, size, and function thus far, can be produced artificially. At this point physical science halts, very far indeed from the goal of complete enlightenment. To all appearance it is an eye in form, size, color, weight, all perfect in reflection, refraction, and condensation of light, but it cannot see. What we call "vital force," "vital agency," in the animal economy, is beyond the piercing ken of physical science, and ever shall be, so long as the intellect of man is fenced in, and besmirched with the mire of this world, and its imperfect life. A great teacher (I believe Sir Everard Home), in lecturing to his class on the human stomach, says: "Some have called this organ a *retort*, some have called it a galvanic battery, and some have called it a *mill*. Gentlemen, it is none of these. It is a stomach." I know of no three lines in medical literature more suggestive of broad, comprehensive truth than these.

The operations of the stomach simulate in some degree all of these physical machineries; but, as in the case of the eye, above and beyond all these there is the vital power, so-called, which utilizes all, and without which they are but useless appendages to the human body. The machinery through which this vital force acts is of itself exceedingly complex. Most organs of the body have yielded to the anatomist and physiologist the secrets of their functional life. Others, after ages of painstaking investigation, are imperfectly understood, or not at all, to this day.

Let us be modest. Let us claim for ourselves just what is our due and no more, a place in the "republic of letters." Not a science, strictly speaking, but a department of human learning of which we may well be proud, gaining, ever gaining, in the strength and power which increased knowledge gives. The best work of the physician of to-day is to try to discover the causes of these deviations from health, make all possible efforts to remove or avoid them, and when his case is incurable, to alleviate what he cannot cure.

I had thought of saying something as to the claims of our profession upon the public. The old satire about the attorney pleading his own cause will no doubt suggest itself to you at once. But the pungent epigram loses its force, when applied to us. We have no beggar's petition to offer, and will not tax the benevolence of the "dear public" by asking gratuities. We ask the public to treat us as we try to treat disease, each one on his own merits. It is their right, and their duty, to scrutinize with the greatest care the conduct, professional and personal, of any man, presumably cultured, occupying a place of responsibility in which are wrapped up, very often, their nearest and dearest interests. It is their right and their duty to mark with the broad brand of condemnation every failure short of professional integrity and personal honor. As a profession, we have no right to demand favorable recognition at the hands of the public. Profession of angelic purity oftentimes covers from human eyes a heart and a secret life black with crime. In this great and beneficent profession of ours there are dark paths which, unhappily, do not always lack wayfarers to walk therein. But as honest practitioners of a legitimate calling, so long as we worthily represent that calling, we do not beg for, we demand, and generally get, respectful consideration.

It should not be a discouragement to the honest members of our profession, that we find in it many who are dishonest and unworthy. All professions have them; the clerical, the legal, the medical; and I have heard that there are a few bad men outside of all these. Humanity is weak, and imparts the odor of mortality to everything he touches with his foul and feeble hands. The contest between virtue and vice, in high places and low, is the business of the race, so long as it inhabits this planet. The contest is long, the progress slow, but sure. Our profession should do, and I believe is doing well its part toward the great result. Every one should add his mite, first in self-improvement and self culture to a higher plane of personal and professional position, and next to the improvement of our fellows. If we can do no more, let us put ourselves in the right, and *wait*. The great poet says:

"They also serve, who only stand and wait."

It is a maxim in political economy, that a demand for any article of commerce, good or bad, will create a supply equal to the demand. It is true of the moral as well as the political world. Create a demand in community for any species of crime, and criminals are ready at hand for their perpetration, for a "consideration."

I know of no deeper disgrace to the intelligence of the age, and the boasted Christian civilization of this nineteenth century, than the criminal disregard of human life which pervades society from top to bottom of the social scale. I do not allude to the nightly brawl over the wine-cup, or the midnight and stealthy murder for money or revenge, or the many ways in which men are done to death by knife, or bullet, or poison. These are bad enough and plentiful enough for thoughtful consideration, but not properly within the scope of this paper. The moral obliquity which ignores the responsibility of the parent for the lives of unborn children, is the most discouraging and alarming feature of this age. Unlike other crimes against God and society, it seems to grow rather than diminish with increasing intelligence and refinement. We hear a great deal of talk now-a-days about the restricted sphere of woman, the rights of woman, the little power she has, compared with what she ought to have, woman suffrage, etc. I am aware that this subject should be approached cautiously, as becomes the worldly wise, for these dear creatures, despite their own assertions to the contrary, have a mighty influence for good or evil, and they are not backward in their resentment of real or fancied injuries, and encroachments upon their rights. We will venture to suggest, very mildly and with the profoundest respect for true womanhood wherever found, that women would do well, first, to discharge the duties pertaining to the rights they already have, before demanding so loudly a more extended sphere. In the scramble for their own rights, so-called, let

them not forget the rights of their own children, which they, of all others, should be vigilant in preserving. And the first and most important of these is their right to be born. That the primary guilty party, in the production of criminal abortion, is generally the mother, cannot be successfully denied. Not always the first proponent of this measureless crime, but a consenting party to it, she is always. It is with unspeakable sorrow and regret that we are forced to the conclusion, after much observation, that she is, as a rule, guilty from first to last. The most humiliating and discouraging aspect of the case is, that this crime against God and nature is much more prevalent among the cultured and religious people of the country, than among the ignorant and depraved. As a rule, the uneducated mother, untrammelled by the bonds of fashionable life, and its dissipations, hearkening to the voice of God speaking to her through her maternal instincts, loves her offspring, and cares for it to the best of her ability. It is not held that mental culture, wealth, and high social position, are necessarily productive of the moral obliquity necessary to the commission of this great crime. Nor is the indictment against the class without exception. I do know that of these, there are very many of the best of mothers, who put first and foremost of all the duties of life the care and proper rearing of the children which God has given them, whose lives are blest each day by duties well performed to this end, who recognize in the home circle not only the widest sphere of action within the capacity of any human being, but one which secures to them the best possible field for a useful and happy life. Nevertheless, it must be conceded that to this class of people, namely, the educated, refined, religious and fashionable, a very large measure of guilt must be awarded.

While it is true that the impulse to this crime is often the offspring of ignorance of its true significance, and a plain relation of the facts is all-sufficient to convince the judgment and regulate the action of the deluded mother, I but state the facts in the experience of every physician, when I say that in an astonishing number of cases, his pleadings and demonstrations will be met by ears that hear not, and a mental vision which will not see, be the light ever so clear; and a perverted moral sensibility and recklessness frightful to behold. Reason and entreaty are thrown away upon such, and she invariably rewards her faithful medical adviser with undying hate and ceaseless persecution. She goes on in her evil way, stifling the pleadings of her own better nature, and the almost irresistible conclusions of her reason, deliberately taking upon herself a load of remorse and vain regret which will stick to her, like the shirt of Nessus, to her dying day. Reason with her as you may,

> "She is convinced against her will,
> And of the same opinion still."

This and other disgusting expedients, aimed at what is called very mildly, control of population, have already told disastrously upon the natural increase of this best class of society. It is so pronounced as to excite the alarm of thoughtful men all over the land. The bulk of our increase is from the poor and depraved classes, and from the foreign population. It is a shame to American civilization that our educated women must be outdone, in this highest of all moral duties, by their less favored sisters.

I suppose that the criminal jurisprudence of the civilized world cannot show anything more curiously absurd than the English law on this subject. Up to about ten years ago, the production of an abortion previous to the fourth month of utero-gestation, was in law merely a "*misdemeanor*," punishable by a ridiculously light fine. After that time (which they called the period of quickening), the same act was called "murder," and invoked the death penalty on proof of guilt. It may be that this absurd law, based upon imperfect physiological knowledge, had much to do with misleading all English speaking peoples as to the time when responsibility for human life begins. In the light of what we know now of the laws of life, it seems strange that any one should be misled in the matter, law or no law. Be the causes what they may, of a certainty the minds and consciences of our people are fearfully warped out of the straight in this direction. A large and steady demand for the services of the abortionist is created, and the supply to satisfy it is, of course, not lacking. It is hard, but we must admit the disgraceful fact, for it stares us in the face at every turn, that this demand is largely filled from the ranks of the educated practitioners of medicine. Is there any plea in justification, or even in palliation for such men?

Thus stands the case. He pretends to practice an honorable profession, stands well in society, perhaps well in the church. He has studied and understands the physiological principles involved. He knows that, from the instant of conception, the subject of it is just as much a human being as it ever is afterward; that it is, from that instant, as much the subject of responsibility as it ever can be, and that to interfere with the development just begun is deliberate murder, and if done or connived at by him, a sin against the clearest light and knowledge. In place of acting the part of an educator of the ignorant as to their duties, and refusing to be a copartner in their guilt, he assumes the position and function of a hired assassin for a pitiful sum of money.

It may be said by way of excuse, that many women who commit this dark crime, know not what they do. They are ignorant or thoughtless as to their true responsibility to an unborn child. But what excuse is there for the educated physician?

It is not just to arraign the medical profession as a whole, for the misdeeds of these unworthy members. From the American Medical Association down to the smallest local societies, the profession collectively has borne the strongest testimony and adopted the strongest official declarations against this crime. It must be confessed, however, that among the honest and true members of the profession there is a lack of courage in confronting this evil; a kind of moral cowardice which prevents him, for fear of losing patronage, from exercising his whole power and influence as an instructor and mentor to the ignorant and thoughtless. I do prefer to attribute a very large part of this

great crime to ignorance, rather than to out-and-out wickedness. And for this lack of information I hold the right-minded, honorable members of the medical profession largely responsible. They are the natural and proper teachers of the community on this and kindred subjects, and I honestly believe, and am sorry to believe, that they have but poorly discharged their duties.

We cannot dodge our responsibilities in this matter. We must be missionaries, devoted to the cause, until this heathenish darkness is dispelled, and this heathenish practice driven from our fair land. Above all, let us all do our best to educate the head and the heart of that fairest and most lovely of all God's creatures, the American girl, so that she may avoid this soul destroying crime against God and her own flesh and blood.

NOVEL METHODS OF TREATING DISEASES OF THE MIDDLE EAR.[1]

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In diseases of the middle ear, attended with increased and perverted secretions, the surgeon often feels the need of methods more effectual than the old ones for evacuating this cavity. Serum and mucus may be absorbed if they are not too abundant, but in frequently recurring attacks of sub-acute inflammation, such as occur in persons subject to naso-pharyngeal catarrh, nervous coryza, etc., the secretions are so profuse and attacks follow each other in such rapid succession, at certain seasons, that the middle ears contain mucus for periods of considerable length. Absorption may not occur after one attack before another supervenes. Unless these secretions can be removed, progress toward recovery is impeded, and the hearing is seriously impaired.

Instead of relying solely on the old methods of evacuation by injections into the middle ear, paracentesis of the membrana tympani and inflation, I have employed a treatment so simple that patients may practice it unaided. I have never seen such a method published, but I believe that its beneficial effects in a large class of cases entitle it to a place in aural therapeutics. This method is the reverse of the Valsalvian experiment. The patient closes the mouth and nostrils and exhausts the air in the naso-pharynx by a strong inspiratory act. This causes the ejection of the column of air and the secretions from the Eustachian tube and tympanum into the pharynx. The success of this practice becomes apparent in several ways. On evacuating the middle ear one experiences at first the subjective sound of rushing air, followed by the sensation of a movement inward of the drum head and ossicula. These sensations are accompanied with crackling sounds, comparable to fine mucous râles. After the discharge has entered the throat it may be seen on inspection with the rhinoscopic mirror, and sometimes without it, covering that portion of the wall of the pharynx corresponding to the side with the affected ear, if but one ear is diseased. When the patient clears the throat the evacuated secretions are forced into view upon the column of the fauces. Sometimes after expectorating the discharge a peculiar, disagreeable taste is left on the tongue. It has been compared to a metallic taste, when I have found a mixture of mucus and pus escaping from the tube. After removing the discharge the patient is directed to swallow, or practice the Valsalvian experiment, whereupon the air re-enters the middle ear and restores the equilibrium of atmospheric pressure on both sides of the drum head. A sense of relief from pressure, and increased hearing distance, follow. One should not inflate the middle ear too soon after practicing this method, else the tube and tympanum may not be emptied completely, and the entrance of air through the tube may force some remaining fluids back into the tympanic cavity, where they will be retained until the next treatment. That the discharge does not emanate from the nasal cavities is apparent from the rhinoscopic examination, and from the fact that it occurs when there is no concomitant naso pharyngeal catarrh, and the peculiar taste is experienced only after each evacuation of the ear. When the contents of the tympanum are of too great consistence, or too tenacious, to pass readily through the tube, we may liquefy them by injections of warm water solutions of salt or soda, so as to render their expulsion possible.

There are cases in which this method is impracticable owing to resistance in the tube. Its walls may participate in the tympanic inflammation and become so swelled as to close the passage into the middle ear, or the walls of the tube may be agglutinated together by adhesive secretions. Yet after ineffectual attempts, success has often rewarded repeated efforts, and a threatened rupture of the membrana tympani has been averted. A short, spasmodic effort may not suffice, when an inspiratory act, prolonged for the space of five or ten seconds, may succeed. If it does not, the surgeon may diminish the resistance to the passage of air through the tube by the use of astringent Eustachian bougies, or washes, when the occlusion is due to swelling of the walls. When the stoppage is attributable to the presence of secretions, the following method may be resorted to: A vulcanite syringe may be introduced into the Eustachian catheter *in situ*. Gentle traction may be exerted with the piston rod so as to suck the contents of the tube into the catheter. By this means the tympanic cavity, as well as the tube, may be emptied. The curve of the distal extremity of the catheter should be so adjusted that the axis of the beak shall correspond to that of the tube. Otherwise the part of the tube impinged upon might be drawn into the opening of the catheter, which would prevent the escape of fluids and occasion some irritation. The syringe should be easily manageable with the thumb and fingers of one hand, and the piston should fit the cylinder perfectly, to insure success. A Politzer air balloon, without a valve, may be substituted for the syringe. The air bag, exhausted by compression,

[1] Read at the Annual Meeting of the Illinois State Medical Society.

may be applied to the catheter and allowed to expand, thus causing a vacuum in the catheter, to fill which the secretions vacate the tube. After resistance in the tube has been overcome by this means the more simple method will probably succeed.

When the inflammatory process extends to the mastoid antrum and cells, and they are filling with secretions, it will be readily seen how much more rational these methods are than that of inflation. The latter practice forces the discharges in the direction of the mastoid cells, while the methods which I propose withdraw them from that locality. Indeed, when there is no concurrent mastoid disease, it need not be emphasized that the act of forcing the unhealthy secretions from the tympanum into the healthy mastoid cells is performed at the risk of inducing a grave complication. Either of the methods I propose is easily practiced, the one by the patient himself, the other by any surgeon who has had some experience in manipulating the Eustachian catheter.

The first method is also applicable to a different class of cases from those previously mentioned. It is serviceable in chronic catarrhal inflammation of the middle ear with proliferation of the mucous tissue, bands of adhesion between the tympanic walls and the ossicles, partial anchylosis in the chain of bones and retraction of the membrane. By repeatedly alternating this method with the Valsalvian or the Politzer method of inflation, the air is alternately rarefied and condensed in the middle ear. The effect of this practice is to cause, by rarefaction, a movement inward of the drum head and motion in the articulations of the ossicles with each other, and of the foot-plate of the stapes in the fenestra ovalis; and, by condensation, the reverse movement. It is evident that by this means the bands of adhesion are stretched, and perhaps divided, and stiffness of the joints is prevented or modified. I employ this treatment on the principle that motion prevents or overcomes anchylosis, as one sees demonstrated frequently in general surgery. It has an advantage over other methods in that patients are able to practice it unaided by a surgeon, and catheterism can be omitted. These are important considerations in the treatment of sensitive and fastidious or indigent patients. If they are unable to inflate the middle ear by the Valsalvian method, they can be instructed in the use of the air balloon. I have observed the hearing distance rapidly increase when no other treatment than this passive motion was employed. It is apparent that as the freedom of motion is restored in the sound-conducting apparatus it becomes possible for it to respond to sound waves, to the vibrations of which it was not before susceptible.

When this method is not successful, on account of an impermeable tube, I have resorted to another device which does not depend for its success on the condition of the Eustachian tube. I use a rubber tube of suitable calibre and length to fit into the patient's external auditory canal and extend to the mouth. By alternately rarefying and condensing the air in the external meatus he obtains the same movements in the conducting apparatus as were performed in the former experiment. To accomplish the same object I use Siegle's pneumatic otoscope. The advantage of this instrument is that the surgeon inspects the drum head during the treatment, and ascertains the degree of its mobility.

In closing, I will briefly describe one other method of treatment, which I have never known any other surgeon to use. I employ it for the purpose of applying various medicinal solutions to the walls of the external auditory meatus, tympanic cavity and Eustachian tube, without the aid of the Eustachian catheter. If the middle ear is discharging pus through the perforated membrana tympani into the external meatus, these cavities are thoroughly cleansed. Then, the patient's head being inclined to the opposite shoulder, the meatus is filled with the warm solution. The patient is then directed to exhaust the air of the middle ear by practicing the experiment I have already described. This effects the evacuation of the fluid in the external meatus through the middle ear and Eustachian tube into the nose or throat. In those cases where the Eustachian tube is patulous this is accomplished with little effort by the patient, and the tympanum and tube are thoroughly treated. In this manner I have used solutions of boracic acid, zinc sulphate, carbolic acid, mercuric bichloride, etc., with the happiest results.

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MEDICAL PROGRESS.

A NEW MICROCOCCUS AS THE PATHOGENIC AGENT OF INFECTIOUS TUMORS; ITS RELATIONS TO PNEUMONIA.—DR. MANFREDI has recently made some researches in regard to the pathogenic agent of morbillous pneumonia in the case of two persons dead of measles complicated with pneumonia. No autopsy could be obtained, and the experiments were made with the saliva, the lachrymal secretion, and scrapings from the skin. The following is a résumé of the results obtained:

In the two cases the sputa contained constantly, and independently of the pneumococcus of Friedländer, a specific micrococcus endowed with very pronounced pathogenic properties, to which he gives the name "*micrococcus of lymphoma or progressive granuloma*," which, when inoculated on animals, gave rise to particular pulmonary lesions analogous to those of pneumonia. From the lack of necroscopic examinations and on account of the small number of cases on which the researches were based it is not yet possible to say what part this microbe plays in the pathogenesis of secondary morbillous pneumonia.

The micrococcus has an ovoid form, is often seen as a diplococcus, and measures about 0.5 μ. It develops tolerably well in all the common cultivating media, and the growth of the cultures is very rapid when air is freely furnished. On thick gelatin, on which typical cultures are obtained, the colonies are presented as discs, first thin and of a blue tint, then thicker and of a pearl gray color, with excavated borders and almost always a nacred reflex on the

surface. The growth and multiplication of this micrococcus causes a very marked rarefaction of the cultivating medium. In studying the influence of temperature and dryness on the cultures, it was found that the micrococcus develops in two distinct forms: a transitory and a more permanent.

Inoculation experiments were made on dogs, rabbits, guinea pigs, mice and birds. With the exception of the last, which succumbed to what seemed to be blood-poisoning, all the animals presented only one form of pathological manifestations, which was most clearly seen in the rabbits and guinea pigs. Of a total of 80 animals experimented upon only four were refractory and escaped fatal consequences from the inoculations. The micrococcus possesses very pronounced infectious power, which seems to be chiefly exerted upon the respiratory apparatus. This virulence is endowed with a capacity of resistance which is remarkable, persisting in the cultures for several months, and resisting successive passages through the animal organism, as was shown by series of inoculations on the animals. It resists dessication to a marked degree.

As a rule the animals died from the seventh to the twelfth day. At the autopsy there was enormous tumefaction of the parenchymatous organs, principally of the spleen and lymphatic ganglia. The tumefied organs were studied with gray or grayish-yellow nodules. Independently of the nodules the lungs contained the characteristic lesions of a more or less extensive pneumonia, even in the stage of hepatization, even when the inoculation was made in the subcutaneous cellular tissue. The nodules belonged to the class of granuloma, or infectious tumors with granulations. They usually go on to calcification, which begins at the centre; they contain the specific micrococci, and are infectious.

This new micrococcus usually leads an intracellular existence, and its pathogenic action consists in provoking caseous necrosis of the parenchyma of the cellule. More rarely they are found outside the cellular elements, and very exceptionally in the vessels. In the foci of degeneration and necrosis developed about it this micrococcus is not killed, for it can exist in a state of great rarefaction or dilution of the elements necessary for its existence.

The pathogenic action of this schizomycete is exerted principally on the lymphatic system, which represents at the same time both the port of entry of the infection and the most favorable medium for the development of the infectious agent. When the latter is inoculated into the subcutaneous cellular tissue there is formed, at the seat of the inoculation, a nodule which often grows very large, and which is made up of a plastic exudate on the way to caseation. It is in the centre of this nodule, which is the centre of a violent inflammation, that the lymphoid cells are penetrated by the micrococci, and thence transported to the lymph vessels in the vicinity. Along these vessels there are formed a series of small disseminated inflammatory nodules; and thus the whole system is infected.—*Gazette Méd. de Paris*, December 4, 1886.

Gaseous Rectal Injections in Respiratory Diseases.—M. Cornil read a communication on this subject at the meeting of the Académie de Médecine on October 19, 1886. The principles of the action of gaseous injections and their rapid elimination by the lungs, as given by Cl. Bernard, who showed that when sulphuretted hydrogen was injected into the recta of animals the gas was eliminated by the lungs; and he showed that it may be thus injected for a long time without causing accidents, while its introduction through the natural air passages causes serious results. This gas, however, is not well tolerated by the intestines. Carbonic acid gas, on the other hand, is well tolerated by the rectum and large intestine; it is rapidly absorbed, and eliminated by the lungs with the medicamentous gases which are incorporated with it.

In July M. Bergeon published the results obtained in the treatment of pulmonary phthisis by rectal injections of carbonic acid gas charged with medicamentous substances. He now gives his further results: Physicians of Lyons, Paris, Geneva, and Marseilles, who have treated phthisical patients by this method, have generally obtained the result of seeing the signs of pulmonary suppuration disappear, and the rapid downward course of the disease turned towards a state of health which promised cure. As regards the patients treated by me during the past two years, I can affirm that the results announced in July are confirmed and generalized. The phthisical patients whom I considered cured no longer have expectoration; and on auscultation there are only the dry stethoscopic signs of cavities or of cicatricial formations from old lesions. Some of these patients have to work very hard, and undergo excessive fatigue, but the improvement has been steadily maintained. The expectoration is very markedly diminished, in fact amounting to almost nothing now.

Whatever may be the action of these injections it is certain that they render hæmatosis more easy and more complete. They cause a sensation of well-being which is accompanied by an increased power. M. Bergeon gives the following directions for the use of carbonic acid gas for this purpose:

1. The gas should be as pure as possible, so as not to make a disagreeable impression on the intestine That which is obtained by the reaction of dilute sulphuric acid or bicarbonate of soda is always perfectly absorbed by the intestine without causing any disorder.

2. The gas should be collected in a receptacle previously completely freed of air; and the tubes of the apparatus should be so fixed that no air can enter the bowel, as it will cause meteorism and enteralgia.

3. The injection should be made before a meal, or three hours after. The instruments should be so made that the physician may accurately gauge the amount of gas thrown into the intestine, and the amount of pressure exerted on the intestinal walls.

Great care should be taken with regard to the medicinal substances used; turpentine, chlorine, ammonia, iodine, bromine and ether cause inflammation of the intestinal mucosa.

Dr. Chantemesse has used this method at the St. Antoine Hospital for three months, with the following results: Attacks of asthma cured by injections of carbonic acid gas charged with sulpho-carbonated vapors. In some of these cases the effect was quickly seen during an asthmatic attack. Pulmonary tuberculosis was treated with the same mixture, and with excellent results.—*Bulletin de l'Académie de Médecine*, No. 42, 1886.

TREATMENT OF PROLAPSUS ANI IN INFANTS.—DR. BETZ, of Heilbronn, relates in the *Memorabilien*, 1886, Heft 4, the case of an infant five months old which had been afflicted with prolapsus ani for five weeks. Cold water enemata, ice suppositories, dusting with pulverized alum, tannin locally and internally, opium, bromide potassium, and even injections of ergotine had been employed without benefit. The little patient was in a deplorable condition, greatly emaciated, covered with large and small boils, and intertrigo; it was incessantly straining and crying. The prolapsed bowel was a livid, conical plug, 5½ cm. in length; it was readily reduced, but pressure being removed it was shot out again by the straining of the child. Profiting by a knowledge of the treatment previously used, he at once determined to resort to nitrate of silver applications, but as the application of the stick caustic always acts unequally on the mucous membrane, and may result in ulceration, he made a solution of argent. nitr. 1.0, sulphuric ether 5.0, alcohol 25.0. This solution, though it gives rise to some smarting, can be evenly and equally applied and enters the tissues to a considerable depth. The prolapsus was thoroughly painted with the above solution, and even after a few minutes it became paler, began to shrink, and could be reduced more readily. To act on the upper portion of the mucous membrane a small piece of alum was introduced high up into the rectum. To prevent the bowel from slipping down, and to exert continued pressure on the anus, the nates were firmly pressed together and held in this condition by three broad strips of adhesive plaster, which were applied on either side, running from the anterior surface of a thigh across the seat to the opposite anterior surface of the abdomen. The next object was to stop the tenesmus and to prevent defecation, which was accomplished by keeping the child slightly under the narcotic influence of opium, and restricting its diet to small quantities of milk and water. The tenesmus stopped at once, and flatus was freely passed in twenty-four hours. The dressing was reapplied after two days. No prolapse occurred. The anus was cleansed with a wad of cotton steeped in carbolized oil, five per cent., and a piece of alum was again inserted. The anus was found drawn into folds and contracted. After three days a new dressing was necessary. The gut being slightly prolapsed, was treated with the stick caustic. Two days later the dressing was permanently removed. Stools came on without tenesmus. In order to insure contraction of the anus, he ordered it touched with alcohol for a few days. The cure was completed in eight days. Betz, though he is inclined to attribute much of the rapid success to the application of nitrate of silver, claims that the combined treatment carried out by him is entitled to the credit for the same, and would in a similar severe case not do without the adhesive dressing, the opium, the restricted diet and the alum suppository, in addition to the nitrate of silver application, while in a milder case nitrate of silver, opium and restricted diet would be sufficient for a cure. No relapse occurred.

REGENERATION OF THE SPLEEN AFTER EXTIRPATION.—A. ETERNOD reports an experimental case on a fox, four months old, from which the whole spleen was removed. It died 161 days after the operation, and the autopsy showed the following peculiarities: 1. Partial regeneration of the spleen, consisting in the new-formation of a splenic nodule, having anatomical connection entirely different from those which supernumerary spleens have under ordinary circumstances. 2. A new formation of ordinary tissue in the ganglia and Peyers's patches, in the adipose tissue of the mesentery, and even in the hepatic lobules. 3. Transformation of the ganglionic parenchyma, old and new, in the splenic parenchyma. 4. Diminution in the quantity of the blood. 5. Increase of the adipose of the mesentery. These results agree, in a general way, with those obtained by Tizzoni, Griffini, and others in experiments on the dog.—*Revue. des Sciences Méd.*, July, 1886.

TO BREAK UP A HYSTERICAL PAROXYSM.—RUAULT, of Paris (*L'Abeille Méd.*), has often employed firm and continuous compression of some superficial nerve. The supra orbital nerve is especially adapted for this purpose. The patient's head being firmly held between the hands of the physician, he places his thumbs on the inscisura supra orbitalis and makes gradually increasing pressure. The effect is said to be as follows: The patient begins to contract her facial muscles as if in pain, gives vent to short screams, makes four or five short inspirations, the thorax remains fixed in inspiration, the dorsal and nuchal muscles contract to hyperextension of the spine. Now a deep expiration takes place, the muscles relax, the paroxysm is over. The pressure may have to be repeated, as a new paroxysm may come on after a short time, and resorting to it early may intercept the attack. The sooner the paroxysm comes under treatment the more rapidly will it be broken up by the maneuvre.—*Memorabilien*, Heft 2, 1886.

NEW OPERATION FOR PROLAPSUS UTERI.—A Mexican medical journal gives an account of an operation practiced by Dr. Malanco for the purpose of forming a kind of false uterine ligament in cases of prolapsus. It consists in passing a trocar from the anterior vaginal fornix to the abdominal wall (taking care, of course, to avoid the bladder), and in applying the actual cautery to the track by means of a thermo-cautery inserted through the canula from the front. The proceeding, which was first proposed by Dr. Fenelon, of Mexico, is stated to have been employed several times with the most successful results.—*Lancet*, Nov. 20, 1886.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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A NEW TREATMENT OF FEVERS.

M. ALBERT ROBIN, who so admirably combines a thorough knowledge of physiological chemistry with medical learning, has just published, in the *Gazette Médicale de Paris*, of December 25, what he calls "A New Therapeutic Method; or the Oxydizing Method in the Treatment of Fevers, and particularly of Typhoid Fever." In this communication he directly combats the accepted ideas as to the antipyretic treatment of fevers, and he does this in accordance with new grounds which are "more in accord with our knowledge of the state of nutrition in pyrexia." From the chemistry of nutrition in typhoid fever M. Robin lays down the three following propositions: 1. The elevation of febrile temperature does not depend on an increase of organic oxydations. 2. During fever there is retention in the organism of but slightly soluble waste, eliminable with difficulty, and generally toxic. 3. Organic disintegration is very much increased during fever. He now wishes to establish the *first therapeutic principle* to which the chemical study of nutrition in fever leads, and to show that so far from seeking to impede oxydations therapeutics should tend, on the contrary, to make them as active as possible, since, contrary to the classic opinion, the oxydations undergo a remarkable diminution in typhoid fever. Now perfect oxydation gives rise to soluble products, easily eliminated, and almost deprived of toxicity; while other chemical reactions give rise to only slightly soluble waste matter, which is eliminated with difficulty, and usually have considerable toxicity.

M. Robin next proposes to prove that oxidation is diminished in typhoid fever. "It has been believed, though wrongly, for a long time that the production of heat is subordinated to organic oxydation. But it it is now known that oxydation is not the exclusive source of animal heat and of febrile pyrexia; and it is also known that disassimilation is accomplished by the successive acts of which the first are hydrations and chemical combinations, which give rise to products which are only secondarily overcome by oxydation, and that animal heat results from the *ensemble* of all these reactions. And in typhoid fever, as the acts of oxydation are decreased the part played by oxydation in febrile pyrexia should be proportionally reduced. Now, in reality, the coefficient of oxydation[1] is less in typhoid fever than in the phlegmasiæ, and even less than in the normal state, since it is not above 74 per 100, while physiologically it is 85 per 100. Again, the proportion of urea is in inverse ratio to the gravity of the disease; and, thirdly, the excretion of carbonic acid of the typhoid fever patient is to that of the healthy man as 83, 8:100. It is therefore vain to attempt to restrain oxydation so as to lower temperature, since this would be assisting the disease. The aim of therapeutics in these cases should be to regulate organic disintegration, and thus to favor oxydations instead of hydrations and chemical combinations, so that the products of tissue waste, having undergone more perfect evolution, may be easily eliminated and rendered as little noxious as possible."

There are, therefore, according to M. Robin, two great therapeutic indications: 1. To eliminate from the treatment of typhoid fever all measures and medicines which retard oxydation. We must from this point of view, revise all our antipyretics. 2. The second indication is to favor, in every way possible, the organic oxydations which will diminish the formation of extractives, of ptomaïnes and leucomaïnes, and which, at the same time, attacking those products already formed, will assist in their elimination by oxydation, or in other words, will make them more soluble and less toxic. In regard to the first indication: sulphate of quinine retards disintegration without diminishing oxydation, provided it be given in small or broken doses; in large doses it lessens oxydation and the absorption of oxygen at the same time. It should therefore be given in small and broken doses. Antipyrin diminishes nitrogenous disintegration, but it at the same time diminishes still more the oxydation of disintegrated nitrogenous matters. It increases the amount of uric acid, and

[1] In excessive assimilation the quantity of urea is increased, and decreased in defective disintegration, according to Robin. To ascertain if the urea is increased it must be compared with the total quantity of urinary solids; and to express this relation he invents the term *coefficient of oxydation*.

diminishes the amount of urea; that is to say, it increases the amount of less soluble and not easily eliminated waste matters, while it lessens the vehicle which should carry them off. It increases the excretion of potash; which is to say, it demineralizes (as regards potash) the red blood globules. Other antipyretics have been tested, and will be treated of in a later communication. How is the second indication to be effected? 1. By maintaining in the air to be respired by the patient oxygen in sufficient quantity. 2. By keeping the respiratory apparatus, which is the port of entry of oxygen, in as perfect a state as possible. 3. By stimulating the nervous system, which exercises a direct influence on oxydation (cold spongings and baths increase the coefficient of oxydation, and regulate the proportion between the phosphoric acid and the urinary nitrogen, probably by the assistance of the reflex stimulation which they exert on the nervous system). 4. By choosing among the different drugs, those which cause increase of oxydation. As to the chlorine salts, while they furnish some oxygen to the system, they must be given in large doses for this purpose; and as these large doses are toxic, these salts should be rejected. The iodine and bromine salts are more easily reduced than those of chlorine, but the question of their toxic action on the red globules is not yet solved. We must therefore turn our attention to drugs which favor the absorption of oxygen or set free oxygen. Among the agents which will fulfil this indication are alcohol in small doses, common salt, the alkalies, the salts of organic acids, and the free ingestion of liquids.

As has been already said, the second therapeutic principle, derived from the chemical condition of nutrition during typhoid fever, is to favor the elimination of retained waste matters. This has already been made a special study, one of the conclusions of which is that a number of the so-called antipyretics, among which may be mentioned the salicylates, do not diminish intra-organic oxydation, but act on the temperature, and assist in eliminating in a soluble form, the slightly soluble extractives of the system. We may then speak of this new method as "the removal by solution of incompletely oxydized organic residue." The third principal, the restraining of the disassimilation which is so exaggerated in fevers, will be further studied by M. Robin.

COUNTY MEDICAL SOCIETIES.

Two weeks since we stated that the *ideal* plan of a complete and most efficient organization of the medical profession in this country, required the organization of the profession of every county or limited district of each State and Territory, into a Society with a constitution and by-laws providing for regular meetings for mutual acquaintance and professional improvement, and also for the election of one delegate for every five of their members to unite with a similar ratio of delegates from the other Societies in the same State to constitute the State Society, which should have its constitution and by-laws requiring at at least one meeting annually, at which *one* delegate for every ten of its members should be elected to unite with a similar ratio of delegates from all the other State and Territorial Societies in constituting the National representative organization of the profession of the whole country. It requires but a moment of reflection to perceive that a State Society composed of delegates thus chosen annually by the professional organization of each county or district, could not fail to represent correctly the social, scientific. and legal interests of the profession of that State; and that a National Society composed of delegates similarly chosen annually by each of the State Societies would be equally the true representative of all the interests of the profession of the nation. It is equally apparent that such a complete National professional organization would offer the greatest possible facilities for collecting and concentrating the influence of the profession for any great or important object, whether relating to the educational and scientific advancement of the profession itself, or the promotion of the sanitary interests of the whole people; and equally efficient for radiating the spirit of investigation, mutual respect, and generous emulation developed by the annual contact of the most active and enlightened minds in the National meetings, back through the State organizations to the remotest county and parish in our great Republic. It is hardly necessary to remind our readers that a representative National organization, capable of efficient work in the various directions here indicated, has for its foundation the primary organizations in each county or district. On the degree to which these can be made to include every active and intelligent regular member of the profession. and the activity with which their regular meetings are sustained, will depend, in a very great degree, both the permanency and value of the State and National Associations. It is here, in the incompleteness of the primary local organization of the profession in many parts of our country, that we trace nearly all the important defects in the practical working of our present State and National Associations. While State Medical Societies exist

in all the States, in only a very few do societies exist in all the counties or small districts, and only in a small number of the counties or districts in which societies exist, do such organizations embrace all the regular practitioners within their respective limits. Hence the most important and urgently necessary work in rendering the medical organizations of our country more complete and more permanently valuable, consists in active and persevering efforts to induce the formation of a medical society in every county containing five or more regular members of the profession, in which they can meet each other annually, semi-annually or quarterly, as they may find convenient. Here they would form each other's acquaintance, mutually increase each other's knowledge by reporting and discussing their more important cases, and their views of the local causes of such endemic diseases as they met with, and by securing the attendance of one or more of their number at the annual meetings of the State Society, where they would imbibe and bring back whatever was developed of value, whether it be new facts, improved practical methods, or increased zeal for investigation. Equally earnest efforts should be made to induce *all* the educated and reputable members of the profession to join the county or local society where one already exists. Experience has abundantly shown that no practitioner in any department of the wide domain of medicine and surgery can spend the same amount of time in any other way so profitably as in habitually attending the meetings of his professional brethren, and personally participating in their work. It softens his prejudices, multiplies his friendships, stirs his spirit of honest emulation, quickens and disciplines his thoughts, broadens the field of his mental vision, and furnishes him with abundant opportunities for making himself generally known and respected, which he could gain nowhere else. A careful study of the history of medical societies and those who have sustained them, especially in this country and Great Britain during the last half century, will demonstrate the advantages to which we have alluded as plainly as the sunlight at noonday. Why, then, do so many, especially of the younger members of the profession, stand aloof in apparently selfish isolation, while others are content to enter into social relations only with a few who are cultivating a narrow specialty—a mere half acre of the broad domain of medicine?. The answer we will try to give next week.

RESPONSIBILITY OF MEDICAL MEN IN REPORTING CONTAGIOUS DISEASES.

Many months since much interest was excited in medical circles by the prosecution of two highly esteemed physicians of New York for damages, by a lady who had been placed in the pest-house by the Health authorities on the strength of a certificate given by the physicians that she had an attack of small-pox, which she claimed was not true. It was not claimed that the physicians had intentionally or maliciously certified falsely, but simply that they had failed to make a correct diagnosis, in consequence of which she had been unjustly exposed to the atmosphere of a hospital for contagious diseases. Though the defendants showed that they had only given the certificate in obedience to the positive requirements of the law and in accordance with their best judgment; and that the Health authorities were the only parties responsible for the removal of the patient from her home, yet the trial resulted in a verdict of damages for a considerable amount. This decision of the court placed every physician in a dilemma. If, when called to a case of contagious disease in that early stage when, as is well known, the chief diagnostic symptoms are not sufficiently developed to admit of a positively correct diagnosis, the physician delays one or two days before he sends his report to the Health Department, and it proves to be a case of small-pox or scarlet fever, he renders himself liable to prosecution for not reporting it earlier; while on the other hand, if he yields a prompt obedience to the law which requires an immediate report, if he happens to err, the decision to which we have alluded makes him liable for full damages to the patient. This places every practising physician in a position so manifestly unjust, that the defendants appealed the above case to the Superior Court, which has recently reversed the decision of the lower court and set aside the judgment.

MULTIPLICATION OF MICRO-ORGANISMS.

In the *Proceedings of the Royal Society*, No. 245, 1886, Dr. Percy Frankland records some series of very interesting experiments on this subject, and shows that the pecularities of multiplication of micro-organisms have an intimate connection with the dissemination of infectious diseases. His experiments show that at the ordinary temperature of the air the micro-organisms show a decided tendency to become fewer after some time of storing; but the number of colonies is very greatly increased by exposure to an incubating temperature. In filtered river water the micro-organisms become multiplied at 20° C. with much greater rapidity than those in unfiltered water; and the organisms in deep well-water manifest but little tendency to multiply in the cold, but at 20° C.

their multiplication is in excess of anything observed with river waters.

With regard to these results Dr. Frankland says: "These tables show the enormous capacity for multiplication which is possessed by the micro-organisms present in this deep well-water. This is the more surprising, at first sight, when it is borne in mind that this water contains the merest trace of organic matter. It must, however, be remembered that this water is at the outset almost wholly free from micro-organisms, and that it has never before been inhabited by such living matters; it is only reasonable to infer, therefore, that those of its ingredients which are capable of nourishing the particular micro-organisms which flourish in it are wholly untouched, whilst in the case of the river waters the most available food-supply must have been largely explored by the generations of micro-organisms which have inhabited them."

We thus have an explanation of those cases in which infectious diseases are disseminated by well-water, examples of which, especially in the case of typhoid fever, are abundant. Dr. Frankland points out that the original source of the micro organisms should be regarded before the value of such investigations are estimated.

CHARLES JAMES FOX, M.D., of Willimantic, Conn., has been appointed Surgeon-General of the State of Connecticut, and entered upon his duties as a member of Governor Loundsbury's staff on the 7th inst. It is a deserved compliment to one of the most active and intelligent members of the profession in his State.

SEPARATING THE INCURABLE INSANE FROM RECENT CASES.—The desirability of doing this has been clearly pointed out by professional writers, and we are glad to learn that the importance of the subject received attention by Gov. Thayer, of Nebraska, in his recent inaugural address.

THE SACRAMENTO MEDICAL TIMES is the title of a new monthly journal, the first number of which will appear in March, under the editorship of James H. Parkinson, L.R.C.S., and Wallace A. Briggs, M.D., of Sacramento, Cal.

RETIREMENT OF PROFESSOR PAJOT.—Prof. Pajot, of the Paris Faculté de Médicine, recently attained his seventieth birthday, the time at which all Professors in French institutions must retire.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, December 20, 1886.

THE PRESIDENT, EDMUND J. DOERING, M.D., IN THE CHAIR.

DR. HOSMER A. JOHNSON read a paper on

PSEUDO-MEMBRANOUS BRONCHITIS.

(See p. 60.)

DR. N. S. DAVIS said: The disease which has been reported in the paper is one of rare occurrence. Having had occasion within the last two years to hunt up the literature on the subject, I found nothing more than has been stated in the paper, but I have no doubt that the disease is of more frequent occurrence than the reported cases would indicate. It is not always readily recognized, the question of diagnosis is not pursued with such closeness that the practitioner identifies it clearly, or gives it sufficient attention to recognize that it belongs to a rare form of bronchitis, and consequently the case is treated until the patient is well, or dead, and no record is made of it. In my own practice I think I have recognized at least four or five cases, and I remember some of them perfectly well, and the facts connected with them. I think the disease is more frequently met with in a chronic than in an acute form. The case that has just been detailed would come under the former class. In the majority of cases the disease attacks only a limited portion of the bronchial distribution. The cases that have been met with in an acute form, covering the greater part of the bronchial distribution, have been almost uniformly fatal.

The last case of this character that I treated was a young woman, a servant girl, who was attacked with general bronchitis. At first I supposed it was only a severe catarrhal bronchitis, but it created a cough unusually suffocating. There was but little expectoration for the first two days, subsequent to that she began to get, in the paroxysms of coughing, a little viscid, frothy mucus, and several times a day there came mingled with it well defined shreds of a membranous character. The patient belonged to a family that had marks of some specific influence of an hereditary character. In the progress of the case, during its acute stage, there were no complete casts, but shreds sometimes an inch and a half long, as though they were torn loose and thrown off. In the later stages the membranous discharges ceased and there was a suppurative condition. She expectorated a copious purulent matter as in ordinary cases of tuberculosis, but there were no cavities of the lungs, and the structure gave no evidence of having been invaded. She finally became exhausted and died. I have seen one other case that I regarded as an acute attack of this character; a child between 7 and 10 years old. That also ran an acute course, and the patient died from suffocation from the persistent obstruction. The other cases that I have seen have been of the chronic character and apparently involved

only a portion of the air passages. They would have attacks accompanied by feverishness and soreness which would go on to suffocating, violent paroxysms of cough, and in the midst of the cough would discharge more or less of the exudation. One case ended in the development of what has been called of late years fibroid phthisis. There was gradual contraction of one side of the chest, diminution of resonance, increased fremitus of voice, and purulent expectoration mingled with more or less mucus, and the patient died exhausted. The record of statistics shows that a large majority are of a partial character, involving but a limited portion of the bronchial surface, and these, though obstinate and apparently difficult to relieve, usually recover. I think that it is stated, also, that there is more than an ordinary tendency to involve ultimately the fibrous tissue of the lung and bring on that form of phthisis. If you examine the membrane under the microscope you will find in the fibrillated material some scant particles of fat granules and here and there a leucocyte, and when expectorated there is frequently an exudation of blood, but I think not often the amount reported in this case. I recollect very little, if any, blood following the expectoration of membrane in the cases I have had an opportunity of observing. Each layer of membrane tends to disintegrate, and when one has been thrown off another follows it, and this goes on, in the chronic form, indefinitely, unless there is a change of condition. In these cases, as in all true plastic exudations, there is some condition of the blood or of the vital properties that continues the existence and exudation of plastic material.

In regard to the treatment, I have nothing specially new to offer. I found that the chronic form was most benefited by ordinary anodyne expectorants combined with alteratives, especially of the mercurial class. In two instances of the chronic form the steady use of the alterative mercurial influence until there was a little swelling of the gum and a taint of the breath, then dropping it and using oxide of potassium with the more tonic class of expectorants, was followed with good results and ultimate recovery.

I remember one instance, I cannot say positively that it was of the true pseudo-membranous character, of a man whom I was called to see and who subsequently came to my office. He had an attack of the subacute character, involving apparently the whole of one bronchial distribution, which produced a very persistent and distressing cough with apparent suffocation. The man and his wife averred that in his coughing he threw off long pieces of a membranous substance several times, but as it was never saved I had no opportunity of examining it. In this case there was a well developed rheumatic diathesis, and I looked upon it as partaking somewhat of the nature of rheumatic bronchitis associated with plastic exudation. I put the man upon salicylate of sodium, dose 10 to 15 grains, accompanied at first by ordinary anodyne expectorants to help allay the severity of the cough. It acted favorably, and not only his bronchitis but his rheumatic troubles disappeared, and he made a fair recovery. The character of the cough and their description of the expectoration led me to look upon it as a case of pseudo-membranous bronchitis, and I questioned in my own mind when contemplating the subject, whether in the true plastic exudation that persistently forms, dislodges, re-forms and keeps on doing so, if the patients were put upon full doses of such remedies as salicylate of sodium or ammonium, sufficient to effect a decided change in the quality of the blood, it might not give better results than those ordinarily used.

Dr. Robert Babcock said. The paper is one of the most interesting I have listened to. It is needless for me to say, since such a man as Dr. Johnson has seen but one case, and such a man as Dr. Bowditch has never seen a case, that I have never seen one. In regard to the etiology, I would merely state that R. Douglass Powell says this form of bronchitis may be observed in all ages from childhood to old age. He differs from the author of the paper in saying that it is more frequent in females than in males. He mentions the probability that there is a hyperinotic condition of the blood. The line of treatment pursued by Dr. Johnson is interesting with regard to this point; after giving iodide of potassium and the mercurial salt in pretty full doses the character of the expectoration changed, becoming mucus and frothy, and it was not until these remedies had been given up and syrup of iron substituted that the plastic character of the bronchitis reasserted itself. May it not be that the exhibition of the potassium iodide and the mercurial salt did overcome to a certain extent the hyperinosis which may have existed in this man's case?

Dr. S. D. Jacobson: It has been my good fortune to see, besides this instance of the chronic form, which I saw through the courtesy of Dr. Johnson, one case which represented the acute form of this disease. It was a friend of mine, a man of about 47 years of age, who was accustomed to take great quantities of alcoholic stimulants. In the winter of 1871 he came to me and complained that for several days he had had some trouble with his pharynx, and he had expectorated a large amount of mucus. I inspected his pharynx and found a condition such as might be expected from a man who was out of doors a great deal, who was an inveterate smoker and a very convivial man. There were no symptoms of diphtheria; it was a case of pharyngitis or tonsillitis. Under the usual treatment it improved in a couple of days. About a week after he sent for me, and I found him with some fever and a very distressing cough. He expectorated great masses of mucus, and I recognized them as casts of bronchial tubes of the first and second order. At that time I had never heard of such a case. The next day I found him in great distress, and after a long and tiresome cough he brought up numerous quantities of matter like the first casts I had observed, which I found to be of the third and fourth order of bronchial casts, and after that he felt relieved, but died on the third day afterward. I then saw a report in the *Scandinavian Medical Archive*[1] describing a case exactly similar to mine, except that the man was 34 years of age. On

[1] Vol. iv, fasc. 4, 1872.

post-mortem it was found by incising the chest that it contained air over both lungs, and the bronchial tubes of the first, second and third order all contained casts. The lung contained air mixed with mucus and pus. The trachea contained casts which terminated on the under surface of the epiglottis. The physician questioned whether it was an ascending bronchitis or a descending fibrinous exudation from the pharynx downwards, because in this case, as in my own, there had been tonsillitis about a week before the alarming symptoms set in, but arrives at the conclusion that the disease was primary in the bronchial tubes. I have thus been fortunate enough to observe this rare disease in two cases, one representing the chronic, the other the acute form, and both of them conforming to the rule laid down by Dr. Davis, that the acute generally terminates fatally, while the chronic in many cases terminates favorably. Both of my cases were of the male sex, and both were rather given to alcoholic stimulants.

DR. E. FLETCHER INGALS said: I have had very little experience in these cases. It has never been my bad fortune to meet with a case of acute diphtheritic bronchitis except those growing out of ordinary diphtheria, which are unfortunately frequent. I have treated three cases of the chronic form of the disease, none of them very severe. In each case there was from time to time expectoration of the croupous deposit, but I did not see them at any time when they were very ill. The history of the chronic cases is that that they will have acute attacks from time to time for months or years, running from ten days to two weeks. They almost universally recover from these, though occasionally they die of phthisis. The acute cases, as a rule, die, though from 25 to 50 per cent. are said to recover. A friend in the country sent me last winter casts from a large number of the bronchial tubes. I should say there must have been five or six branches to these casts. They had been coughed up by a patient of his who subsequently recovered.

DR. C. M. FITCH said: Some eight years ago I had a case of this kind in a lady about to be confined. When I first saw her she was in an almost comatose condition, the face livid, and she was almost pulseless, the respiration fearfully obstructed, although air was entering all the larger bronchi. The woman died a few hours later, the child being born after she had become entirely unconscious. Four or five days later a child of the same family was taken with diphtheritic croup, the membrane passing down through the larynx, when Dr. Fenger performed the operation of tracheotomy. I have no doubt that lady's case was one of acute croupous bronchitis.

DR. H. A. JOHNSON, in closing the discussion, said: In reply to Dr. Babcock as to the influence of the potassium and mercurial salts upon the exudate, not only was the expectoration frothy, but after using these medicines for some time the casts became thin and evidently diminished in amount before they were thrown off. It was my opinion that the mercurial salts and the potassium had some influence in diminishing the amount of the exudate. You will remember, some time in December until February there were no casts thrown off. Some time before that the patient had been taking potassium and mercurial salts. In estimating the frequency of this disease I have excluded cases which seemed to be of diphtheritic origin. I have seen several cases where there have been well marked casts thrown off; in one case there were seven successive discharges from the bronchi ramifications of one lung. Those were diphtheritic and were from a child who was recovering from bronchial diphtheria. I do not say that this is not in its character anything like diphtheria, but I think there is a radical difference in the membrane and that which forms in diphtheria. It does not seem to me that we have the same tendency to disintegration that we have in diphtheritic forms of exudation, the exudate is more plastic. I have purposly not discussed the acute form as I have not had an opportunity to study such cases. The notes were made in the presence of the patient and they seemed to me worthy to be put on record.

DR. H. A. JOHNSON read a paper on

PNEUMATIC DIFFERENTIATION AND MEDICATION.

The question of pneumatic differentiation has been quite largly discussed by members of the medical profession during the last two or three years, but there seems still to be a good deal of mystification on the subject. I was unable to be present when the matter was brought before this society. I therefore beg permission to say a few words which I had intended to say at that time and also to exhibit a contrivance for medication by spray or vapor in condensed air. It is not my purpose to discuss the merits of pneumatic differentiation. The subject, if not the term, has been before the profession for many years, and various devices have been employed in its accomplishment. The manufacturers of pneumatic cabinets insist that the desired results can be realized only by placing a patient in a box with a tube, by means of which he breathes the air of the room, while the pressure on the surface of the body is either diminished or increased by pumping air out of the box or into it. It is claimed that the result upon the body must be quite different from that reached by the use of the Waldenburg apparatus or other similar devices, for the reason that in some way the movement of a body under the pressure of a force, we will say, of fourteen pounds against a resistance of thirteen pounds, in which the available moving force is one pound, must be quite a different process from that which is reached when the moving force is fifteen pounds and the resisting force fourteen pounds. They do not, it is true, state it in this form, but they do assert that, in case we will say of the patient breathing through a tube the external air while the air in the chamber has been partly exhausted, so that its pressure is one pound per square inch less than the outside air, a *vis a fronte* is developed, by which the fluids and gases of the body are moved in a manner quite different from that which takes place when the patient sitting in the room breathes from a tank air compressed so that the pressure of the air breathed is one pound per square inch greater than that of the air in contact with the

surface of the body. It must be evident that there is a fallacy in this claim.

We no longer use the phrase, *vis a fronte*, in the sense of an active force when we apply it to such phenomena as those which occur in the case of a vacuum filled by in-rushing matter. It is well known now that there is an active force from behind, a *vis a tergo*, which pushes into a partial vacuum sufficient matter to equalize the force, whatever it be, on the other side, or to produce an equilibrium of force. In the pneumatic cabinets there is therefore only another mechanical device for affecting the differentiation produced by the Waldenburg apparatus, and which has repeatedly been produced by breathing air from a tank into which it has been condensed by some means, such as air pumps, water pressure, etc. I am not alone in holding this opinion. Dr. Isaac Hull Platt in a paper read before the American Climatological Association at its third annual meeting, is led to conclude that the effects of breathing condensed air from the cabinet, the patient sitting in the room, are the same as those produced when the patient, placed in the cabinet and the air pressure reduced about the body, is allowed to breathe the air from the room. He says: "To put the matter beyond a doubt," that is the claim of a special value in the inclosure of the patient in the cabinet, "I have reversed the breathing tube of the cabinet, placing the patient on the outside and compressed the air within the cabinet. The effects produced upon the residual air and upon the pulse, as well as the subjective experience of the person operated upon, were found to be identical with those obtained when he was within the cabinet and the pressure reduced to the same degree."

I have made quite a number of experiments bearing upon the same question with results in no sense differing from those reached by Dr. Platt. The proposition to conduct medicated sprays into the alveoli of the lungs by the differentiation of air pressure has been also ably treated by Dr. Platt, but I do not desire to consider it in this connection. I presume all admit that to the upper air passages sprays may be applied with, in many cases, benefit. The use of sprays or vapors with condensed air is conveniently accomplished by the use of the cabinet, but this result can be and has been repeatedly reached, and just as easily, by other devices.

I have within the last twenty years resorted to several different contrivances for that purpose; an ordinary atomizing tube may be inserted through an opening in the tube from the tank, so that medicinal substances are thrown in the form of spray into the stream of condensed air inhaled. There are quite a number of ways of accomplishing this: That which I have more recently used and which I submit to the society as a sample of what may be done, consists of a glass tube (I employ an ordinary percolator such as pharmacists use) to one end of which a breathing tube is attached and to the other end through a cork the atomizing tube and also the tube from my tank of condensed air. I at one time used a double tank, or rather two tanks, with an air gauge and stop corks, so that I could maintain any required pressure in the tank from which my patient breathes. This tank may be a simple boiler such as is used in kitchens for heating water for circulation through the house, say eighty gallons or more, or it may be in any other form desired. As the pressure is never great, not more usually than one-half or at most three-fourths of a pound to the square inch, it may be made of wood. A strong, tight cask or barrel even will answer the purpose. The ordinary form of pneumatic cabinet—the New York cabinet or the Pine cabinet—may be used as a tank, but it is unnecessarily heavy and clumsy and expensive. As I have a Pine cabinet in my office, I use it as a tank, with an 8 inch air pump for compressing the air. A copper or sheet-iron tank that can be obtained of any plumber at a small fraction of the expense of the cabinet is quite as useful. Any physician who has a spray tube and glass vessel with two openings, a wolf bottle or even an ordinary wide-mouthed bottle, can provide himself with an apparatus just as useful as the pneumatic cabinet. By the use of a thin way stop-cock expiration may be made into a tank of compressed or rarefied air, or against a valve supported by a spring of any desired pressure, or through a narrowed opening, so as to regain force to expel the air from the chest. All these methods have been used to accomplish the same result, as expiration from the cabinet into outside air. The simpler the thing, provided it works, the better. The less mystery thrown around the whole subject, the better. I am quite confident that the physiological and therapeutical results obtained by the pneumatic cabinet are only such as may be reached equally well by the Waldenburg apparatus or by the still more simple means used some years since by the late Dr. Frank H. Davis, of this city. The apparatus is within the reach of anyone having a tank for condensed air for the purposing of atomizing or vaporizing medicinal substances, and requires no more skill or knowledge in its use than is required to administer narcotics, antipyretics or anæsthetics.

Dr. E. Fletcher Ingals asked Dr. Johnson if he thought the patient would get more of the medicated vapor into the lungs with the compressed air than with ordinary air.

Dr. Robert Babcock said: It has always been my opinion that pneumatic differentiation is essentially the same as the administration of compressed air, and I have not found reason to change this opinion. However, in justice to the inventor, I would like to ask Dr. Johnson what he thinks of Mr. Ketchum's assertion that the rarefication of the air around the chest of the patient by lessening atmospheric pressure allows the chest, and therefore the residual air, to expand, and with this expansion of the residual air lessens the resistance to the tidal air. In other words, that if the residual air did not expand the tidal air would meet with resistance from the residual air as from an air cushion; also, that this expansion of the residual air tends to force out any little plugs of mucus which may have obstructed the bronchials; that in this respect pneumatic differentiation certainly accomplishes more than could be done by the inhalation of compressed air.

DR. H. A. JOHNSON said: The claim of a special *value* in the cabinet as a means of differentiation is based upon a fallacy, viz., the assumption of the *vis a fronte*. If you take the pressure off from the outside of the chest there is a kind of force that drives the fluids to the surface of the body. Suppose you reverse the case, place the patient outside and let him breathe the rarefied air, is there a *vis a fronte?* It certainly seems to me that there is no such thing. It is a *vis a tergo* that pushes air into the lungs, and a *vis a tergo* that pushes the air out of the lungs, and the equilibrium is maintained. As to the effect of the rarefied air in the cabinet upon the residual air, it is about the same as going up and down in an elevator of one of our tall buildings. In answer to Dr. Ingals, it would seem to me that more spray may be carried into the bronchial tubes in the stream of condensed air than in air inhaled without differentiation of pressure. The discussion is simply upon the physiology and physics, not the value of pneumatic differentiation. Mr. Ketchum or some one connected with him, invented that term, but the thing itself, taking the name away, is by no means new.

DR. FRANKLIN H. MARTIN read a paper on

ELECTROLYSIS IN THE TREATMENT OF FIBROID TUMORS OF THE UTERUS,

with a description of Dr. Apostoli's methods.

He considered his subject under the following heads:

1. Consideration of the tumor.
2. Means of generating a current.
3. Electrodes, connections and other apparatus.
4. Electrolytic action of the current.
5. Cataphonic action of the continuous current.
6. The difference in the local action of the two poles with powerful currents.
7. Operation and details of application, with a description of Dr. Apostoli's methods.

He divided fibroid tumors of the uterus according to their position, into submucus, interstitial, and subperitoneal; according to their condition into hæmorrhagic and non-hæmorrhagic. Any means of generating a continuous uninterrupted current of electricity of 200 milliampère strength that is practicable will answer all the requirements for electrolytic treatment of fibroid tumors of the uterus. Dr. Martin uses a battery composed of 115 crow-foot gravity cells for this purpose, from which he can easily get a current of three or four hundred milliampères strength when properly charged. Storage cells and the dynamo were mentioned as possessing a future for this kind of work.

The very strong current that one now used in operations of this kind is made practicable by improvements in electrodes and conduction. Dr. Apostoli overcame the pain caused by high tension currents by using as a surface electrode a thick paste of potter's clay spread upon the abdomen with proper connections from a plate of soft metal upon its free surface. This answers the purpose perfectly, but has the objection of being very troublesome and very inelegant. Dr. Martin presented a decided innovation in this direction in the way of a surface electrode. From a soft plate of metal, the margins of which are bent so as to form a concavity upon one surface of an inch in depth, he has constructed an electrode by stretching loosely over this concavity an animal membrane, making the surface between the membrane and the metal water-tight. Through a stopper in the metal surface the inter surface is filled with a warm saturated solution of chloride of sodium. This contrivance, with its membranous surface upon the abdomen, with proper connections from the metal surface, possesses all the advantages of the potter's clay electrode of Dr. Apostoli, with none of its disagreeable features. The author has been able to use a current of 150 milliampères strength by means of the above electrode without producing the slightest discomfort. The internal electrodes include a uterine sound of platinum with the intra-vaginal portion insulated, a sharp probe of platinum and irridium with insulating sheath and a number of needles insulated with hard rubber to within an inch of the point.

The electrolytic action of the current was dwelt upon at length and given its due prominence.

The cataphonic action of the galvanic current was described, and to its action the author ascribed considerable prominence as aiding absorption of the fibroid growths.

Galvano-caustique is the name given to the local effect of the two poles when used intra-uterine in the form of metal probes. This effect is considered a great point of importance by Dr. Apostoli, and from which he expects to see a great advance developed in the treatment of the hæmorrhagic fibroid tumors of the uterus. The effect referred to is only obtained from a current of 100 milliampère strength concentrated by means of an electrode of unattachable metal. The local effect of the two poles upon the lining of the uterus are distinctly different. The effect of the positive pole is to coagulate and harden the tumor that it comes in contact with without changing the vitality of the tissue. The effect of the negative pole is to cause a liquefaction of the tissues in which it comes in contact, with considerable destruction of tissue.

The coagulating effect of the positive pole is utilized in transforming the hæmorrhagic surface of the endometrium into a dry, coagulated surface that will not allow of a hæmorrhagic exudate.

Three operations or methods of application of these powerful doses were described in detail.

1. Intra-uterine *galvano-caustic.*
2. Negative cervical galvano puncture.
3. Galvano puncture or needle operation: (a) extra-peritoneal; (b) intra-peritoneal.

The first operation (intra-uterine galvano-caustic) is employed for two effects: 1st, to check excessive hæmorrhage by the local effect of the positive pole upon the endometrium of the uterus; 2d, for the reduction in size of the tumor by the electrolytic action of the powerful current as it passes through the tissue of the tumor.

The second operation (negative cervical galvano puncture) is performed for the purpose of establishing an artificial channel into the substance of the

growth, to take the place of the cervical canal that has been distorted or obstructed to such an extent that it cannot be entered for the ordinary intra-uterine treatment. The effect sought here is the reduction of the tumor.

The third operation described by the author of the paper was the galvano puncture, or needle operation proper. This is for the treatment of large sub-peritoneal fibroids that can only be reached by means of needles, and the electrolytic action only of the current is expected.

The author offered the following summary of conclusions:

1. A means of generating a continuous current of electricity which can be increased from 10 to 250 milliampère strength is necessary in order to obtain all the effects of the electrolytic treatment of fibroid tumors of the uterus.

2. The most distressing hæmorrhages from fibroid tumors can be healed by the local coagulating effect of the positive pole if applied intra uterine.

3. The intra-uterine electrode when positive should be of unattachable metal and should conform as nearly as possible to the size and shape of the uterine canal, and have the intra vaginal portion insulated.

4. When the cervical canal cannot be entered a negative-galvano puncture should be made into the presenting part of the obstructing mass of the tumor, and an artificial channel created which is to take the place of the impenetrable uterine canal in all subsequent treatments.

5. The intra-uterine electrode should in all cases be negative, unless there is hæmorrhagia or excessive leucorrhœa, when the positive pole is required.

6. The strength of the current should be the strongest possible consistent with the desired therapeutic effect, and the toleration of the patient.

7. Cases of intolerance of high doses arrange themselves under the three following heads: 1, acute hysteria; 2, acute enteritis; 3, acute metritis, peri- or pari-metritis. The most tolerant are the deep uteri and profusely hæmorrhagic.

8. The ordinary duration of the séance should be about eight minutes.

9. The number of operations are necessarily dependent upon and influenced by the result to be accomplished. A severe hæmorrhagia can be checked in from four to five treatments, while a general reduction of the tumor necessitates many, varied, of course, according to the size and location of tumor. In many cases simply a restoration to health and a relief from the prominent and annoying symptoms must be accepted as the substitute for an actual cure.

10. The time of commencing treatment matters little if the tumor is not rapidly growing and no excessive hæmorrhage is present. The operation should be intra-menstrual, if possible, but if hæmorrhage is continuous, operate during flow.

11. Extra-uterine puncture should be regarded only as a last resort, but every means of reaching the tumor through the uterus being impracticable, seek, if possible, to make the operation extra-peritoneal; should this, in turn, prove equally undesirable, use as a final alternative the abdominal puncture.

12. Strict antiseptic precautions should be carried out in this treatment, as in all others.

Dr. H. T. Byford said: I wish to express my admiration of the mastery which Dr. Martin has acquired over this method of treatment. It will undoubtedly take an important place among the surgical remedies for uterine fibroids. But the usefulness of any remedy must be determined not only by its effect, but also by its safety and convenience of employment. For instance, the radical treatment, or removal of the tumor, is a frightfully severe measure, and is reserved for cases that cannot be cured in any other way, while removal of the appendages is attended with considerable risk of life, and is reserved for those cases which cannot be helped by less dangerous means. So also this electrolysis, which is difficult of application and capable of harm, must be reserved for cases which cannot be cured by remedies more convenient and less hazardous. But before this, the safest of surgical procedures, can become the usual treatment for such cases, it must prove more efficacious than the still safer medicinal treatment. Fibroid tumors with hæmorrhage are the ones also most benefited by ergot and tampons in the majority of cases, and after the hæmorrhage is thus relieved there is no hurry in resorting to surgery. As to the effect of this treatment on the tumor itself, the evidence is not all in. The success of Apostoli, whose persistence is very praiseworthy, has been somewhat limited with regard to the removal of the tumor. The success of the so-called electrolysis upon fibroids seems to be no better, if as good as that of ergot, and I doubt if it is produced in a very much different way. That electrolysis can break up the chemical constituents of a living tumor for any considerable distance from the electrode, without destroying the life and absorbing properties of the tissue in the course of the current, is a theorem that requires more than mere mathematical demonstration. We all believe, however, that it can stimulate the uterus to a contraction and partial strangulation of the tumor, and also stimulate the absorbents to remove it, and are prepared to have it proven to us that it will do so in many cases in which ergot fails. But it happens that the cases in which ergot is of the least use are those in which electrolysis is of most difficult application—the subperitoneal. And yet I have, as a rule, relieved the symptoms of the subperitoneal variety (excepting those immense neglected ones too large for anything but removal) by ergot, which, even when it cannot cause compression of the tumor, can diminish its blood supply. I hope and believe, however, that the methods of Apostoli will enable us to manage safely cases that must otherwise require a dangerous operation.

Dr. William T. Belfield said: Dr. Martin has conferred a favor upon us in bringing Apostoli's method before us. During the last twenty-five years various attempts have been made to reduce fibroids of the uterus by the galvanic current; yet none of them have been recognized as successful, because, doubtless, as Dr. Martin very properly says, the current has been used in an ignorant, inaccurate and bungling way. Apostoli's method is unique in the

strength of the current used, as well as in the accuracy of its application to the uterus; whether this method will produce satisfactory results remains, as I think, to be seen, for Apostoli himself has been guilty of the gross inaccuracy which necessarily impairs the confidence claimed by his statements. Through Dr. Martin's kindness I had an opportunity to read Apostoli's book in which are set forth his methods and the results of treatment on ninety-eight patients. The book bears the impress of perfect candor and truth, and yet, in looking through the ninety-eight cases which he records as fibroids of the uterus, most of which were benefited, it is evident that nearly all were not fibroids, but were cases of subinvolution. Many of them were women under 30 years of age belonging to the poorer classes, and who were unable to secure proper rest and care after confinement. The clinical history as well as the physical examination recorded by Apostoli shows that they were plain cases of subinvolution. That the electric current has a value in such cases is unquestionable and has often been demonstrated, but it is not accurate nor justifiable to apply the results obtained in treating subinvolution to the treatment of fibroids, for the distinction between subinvolution and myoma is as sharp anatomically and etiologically as it is clinically. It seemed to me that only four of Apostoli's cases were evidently and certainly uterine fibroids; it is possible that six others might be so reckoned, but certainly eighty-eight of the cases were, so far as can be judged from the record, cases of mere subinvolution. Yet the results secured in these four cases were most positive and decisive. In two of them the tumors were of enormous size. These two patients had been seen by Pean, whose opinion was sought as to the advisability of operation. In one case he declined to operate on the ground that the patient could not survive an operation; in the other he was ready to operate, but the patient declined. Yet both of these cases of undoubted and extensive myomata were rapidly and greatly improved and the tumors reduced under Apostoli's treatment. But four cases are not enough to justify a generalization, and I hope that Dr. Martin will soon favor the Society with the results of the method in his own hands, for we may be sure that he will avoid the sole error which can be charged against Apostoli.

DR. P. S. HAYES said: I have not given this matter a trial in fibroid tumors, but I have in the use of electricity generally. There are two factors in the treatment of fibroids by electrolysis—the chemical and physical and the physiological. How the physiological action of electricity operates is a question, but the chemical and physical produce their effect by the splitting up of compound molecules and the chemical and physical liberation of gases at the poles. Certainly this factor (the chemical and physical) can be measured by the amount of chemical work done which depends upon the strength of the battery, etc. It seems to me that a current even of 50 milliampère, is rather strong to use in the beginning. I have had quite an extended experience, and I can now call to mind six or eight cases in which even the slightest galvanic current would produce dizziness so that the patient would have to lie down for half an hour. I remember one case in which I used only half a dozen cells; the patient left my office staggering like a drunken woman, and finally had to go in some place and rest. Afterwards I was unable to treat her except by allowing the current to traverse a very minute portion of her body. An induction apparatus the helix of which consists of thick wires and in which the current is generated by a battery of very large surface, gives a current which resembles somewhat the interrupted galvanic current; it stands midway between the ordinary induced current and the interrupted galvanic current of eight or ten cells. This current, applied over a tumor sufficiently strong to produce vigorous contractions, will reduce the size of a fibroid when ergot has failed to do so, and apparently in the same way, by inducing forcible uterine contractions and contractions of the abdominal muscles, tending to astringe it and squeeze out the life-blood which enters into it. It seems to me, from my experience, that the injection of a few minims of 95 per cent. carbolic acid into the tumor would produce a very similar local result to that produced by either the positive or negative pole. In the *Medical Record* that I received to-day I saw an abstract of the last paper of Apostoli in which it states that, while he has reduced fibroid tumors in size, relieved the distressing symptoms and made the patient very much better, yet he does not claim that he has ever absolutely removed a fibroid so that it could not be detected. I think that this method of treatment offers a good deal of hope in many cases where other means have failed, and I should not hesitate to try it myself and recommend others to do so.

DR. FRANKLIN H. MARTIN, in closing the discussion, said: I cannot agree with Dr. Byford that this method of treating fibroid tumors should be reserved as a last resort. In careful hands it is entirely free from danger, pain, and (except in the last variety of operation described this evening) all disagreeable features, and it should not, therefore, be postponed until less efficient and more objectionable means have been employed, such as the hypodermic injection of ergot, its administration internally in large quantities, tamponing the vagina, cauterization of the uterine mucous membrane, and innumerable other less efficient means of relief. In my experience with the strong current I have never yet seen an untoward result, and I have employed currents varying in strength from 25 to 250 milliampères. Apostoli's method should especially be adopted early for the checking of hæmorrhage from the uterine cavity. I cannot agree entirely with Dr. Belfield's conclusion in regard to Dr. Apostoli's results as reported in 1884.[1] My

[1] That Dr. Belfield is in error in regard to this point will be made very apparent by the following summary of the cases reported by Dr. Apostoli and referred to by Dr. Belfield: 94 cases were reported; 15 of the cases had never borne children. Of the remaining 79 cases, where subinvolution of the uterus was possible, we find 4 pedunculated subperitoneal tumors in which error of diagnosis was not probable. Of the remaining 75 cases, 9 measured from 10 to 21 cm., and the accompanying descriptions of the cases can leave no doubt in an unprejudiced mind in regard to their being large fibroid growths. The full description in detail of the remaining 66 will convince any one who will take pains to peruse them that at least 44 are well defied fibroids. This leaves but 22 cases of the 94 reported in which there are not distinctive characteristics described, which definitely distinguishes them from simple subinvolution of the uterus.

own results have been such as to make me very sanguine in regard to the value of strong currents for the relief of these difficulties, but as the object of the paper is the discussion of the method, and not the results, I must postpone the consideration of the latter until another time. I have never seen troublesome dizziness occur in the use of these currents in treatment about the abdomen.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, December 2, 1886.

THE VICE-PRESIDENT, E. E. MONTGOMERY, M.D., IN THE CHAIR.

W. H. H. GITHENS, M.D., SECRETARY.

FIBROID TUMOR OF THE RIGHT LIGAMENT.

DR. W. CONSTANTINE GOODELL exhibited for Dr. W. Goodell the right broad ligament containing an enlarged ovary, and close by its side, but distinct from it, a fibroid tumor of the shape and size of the non-gravid womb. The left ovary was also greatly enlarged. It contained a cyst which burst into the cavity of the abdomen while the woman was being examined four days before the operation, which took place in Dr. Goodell's private hospital on June 22, and she recovered promptly. Her symptoms were painful and feeble locomotion, constant ovarian pains, menorrhagia followed by prolonged dribblings of blood, and a retroversion which could not be rectified on account of the tender and dislocated ovaries. She had been under treatment for several years, and without benefit; but since the operation she had greatly improved.

He also exhibited for Dr. W. Goodell an

INTRA-LIGAMENTOUS OVARIAN CYST,

with the following history: The girl, aged 18, had been growing large for two years, and her health also began to fail, but a tumor was not suspected until six months ago, when she was examined by Dr. Geo. H. Woods, of Pine Grove Mills, Pa. Discovering a cyst, he sent her to Dr. W. Goodell. The operation was performed on September 25, at his private hospital, and was a difficult one, because most of the cyst lay between the folds of the right broad ligament, and the rest of it was adherent at every point to intestines and abdominal wall. It was enucleated so completely that no pedicle was left to tie. He exhibited it mainly to show the greatly hypertrophied and dilated oviduct, the walls of which are very thick and were filled with pus. The left ovary being of the size of a goose's egg, was also removed. It contained pus, and also was enveloped in the broad ligament and had to be shelled out. In spite of the complications, this case recovered promptly. Dr. W. Goodell had had during the past year another case of intra-ligamentous cyst of the most formidable character. The cyst was attached to nearly the whole of the colon, to the small intestines, to the bladder, and to the whole surface of the womb, measuring five inches in length. The lower portion lay between two layers of the broad ligament, from which it was shelled out without a pedicle. The parts were so disorganized that the second ovary could not be found, nor was it possible to determine positively which ovary had been removed. But the presumption is that it was the right, because nearly the whole of the right ureter, fully ten inches of it, had to be carefully dissected off from the cyst wall and from between the layers of the broad ligament. Many ligatures were used, and very little blood was lost, but the patient died on the table from shock, while the wound was being closed. Before this death, Dr. W. Goodell had had twenty-two successive ovariotomies, all of which recovered, and he has had eight successful cases since, making in all thirty-one cases with but a single death.

DR. JOHN M. TAYLOR, upon invitation from the chair, remarked that the first case reported by Dr. Goodell had been originally under his care. He had attended her in labor and nothing abnormal occured in the puerperal period. He had examined her six weeks later, as is his custom, and found nothing wrong. Some months afterwards she had a miscarriage; there was some placental retention, and it was followed by ovarian tenderness and signs of inflammation which gradually increased, the ovaries became enlarged. Nine months after the miscarriage the operation was performed. An interesting question is, When did the tumor begin?

DR. MONTGOMERY remarked that there was a resemblance between the tumor and one horn of a uterus bicornus. Was there a distinct separation between the uterus and the tumor, or could it have been such a horn?

DR. W. C. GOODELL stated that the tumor was separated from the uterus by an inch. The tumor has greatly diminished in size since it was placed in alcohol.

DR. HOWARD A. KELLY exhibited a

PAROVARIAN CYST

weighing thirty-seven pounds. The patient, a young woman, multiparous, had noticed the tumor one year before. The character of the percussion wave and the evenness of the belly wall decided a correct diagnosis. A point of interest was the flatness of the anterior abdominal wall with more fulness in the flanks than the speaker had ever before observed in a cystic tumor. The tumor was removed through a two and a half inch incision. The fluid was viscid and yellowish. There were no adhesions. The broad pedicle was transfixed and tied, and over this a tie made embracing the whole. The wound was closed by silk-worm gut sutures, five to the inch, and the whole operation completed in thirty-six minutes.

It is two weeks to-day since the operation. The patient is sitting up in a rocking chair. She had no fever at all a pulse daily growing slower, and felt well. The cyst was one large cavity containing several cauliflower vegetations on its inner wall. The ovary lay intact on its outer wall and the tube about ten inches in length was drawn out over it.

REMOVAL OF OVARIES AND TUBES FOR SUBINVOLUTION AND CHRONIC METRITIS.

DR. KELLY considers the indications in this case so well-defined and new that he designs making it the subject of a more detailed critical communication. The patient, about 35 years of age, had raised five children, but for several years had suffered from constant soreness of the whole hypogastrium, a spot of intense burning pain to the left of the uterus, and a constant dark leucorrhœa. The menstrual congestions greatly increased her symptoms, which were again aggravated by several early abortions. She had been under excellent treatment before coming to Dr. Kelly, and had been carefully treated by him, but with only moderate, temporary improvement. Dr. Kelly then decided to stop the menstrual function, with a view to checking the periodical determination of blood to the uterus and finally bringing about complete involution of the organ. The operation was performed on the same day as that before described. The ovaries and tubes were removed through an incision two inches long. The ovaries were full of pea-sized follicles and were covered with a dense capsule, and were probably (not, however, in consequence of these appearances) diseased. The speaker insisted that the operation here had no reference whatever to any disease which might be found in the appendages, but the sole indication lay in the state of the uterus; the ovaries, whether diseased or not, were removed to correct that trouble. The recovery was as perfect and free from disturbance as any slight injury, and the patient was up in the next room on the fourteenth day, when the uterus was free from tenderness and already rapidly undergoing involation.

DR. CHAS. MEIGS WILSON considered oöphorectomy a resort of doubtful propriety as a remedy for metritis; for, as the menopause occurring physiologically would not stop such an intlammation, we would scarcely expect it to be of greater benefit when the result of an operatior.. He doubts the moral right of exposing the patient to the risks of abdominal section for such a condition.

DR. KELLY remarked that one reason for the operation for the relief of metritis was the exacerbation of all the symptoms at the menstrual period. Maternity could not again be accomplished in consequence of abortion; complete rest in bed had failed to stop them. He thinks these ovaries are diseased; ovaralgia has undoubtedly some anatomical basis, but he is not able to say how it is to be discovered; more microscopical research is needed. The history of this case excluded syphilis.

(To be concluded.)

DOMESTIC CORRESPONDENCE

RUMEX ACETOSA FOR REMOVAL OF MORBID GROWTHS.

TO THE EDITOR OF THE JOURNAL:

Dear Sir:—In an adjoining county there resides a so called cancer doctress, who, like all of her class, professes to remove and cure cancers without the use of the knife. She uses a plaster which in from three to six applications will, so she claims, "kill any morbid growth and after a few hours poulticing remove it in one piece." That she does succeed in extirpating tumors there can be no doubt, but the means used by the members of the fraternity has, so far as I know, remained a secret which no reasonable amount of money would induce them to impart to the medical profession or laity. Their patients are numerous, owing to the fact that most people, seem to have an innate dread of the surgeon's knife, no matter how skilfully used; although it is far less painful than this local application. Four of my patients during the last few years have had growths removed in this manner, and when they were not of a malignant nature, have resulted successfully. Two of the most intelligent I requested to keep a sharp look-out and try to discover what it was that was used. One of them, with a sarcoma, (not benefited) felt certain that it was the juice of sheep-sorril, and procured the green plant, and after bruising it made the application to the sore twice a day, and had the satisfaction after the third day to notice the characteristic white appearance, which was the indication that its work was done, then with the poultice removed quite as much of the mass as did the quack doctress. The other one, having gone to her home to be treated, reported sheep-sorril as his discovery, having, unknown to her, found her gathering the plant in large quantities from which she extracted the juice, placing it in the sun until it had evaporated to the consistence of syrup when it was mixed with some excipient, and was ready for use.

Shortly after the reception of this information, a gentleman called to consult me about an ulcer on his nose. It had made its appearance about two years before in the form of a pimple, which in due time opened, but would never heal; a scab would form and in a few days come off, leaving an ugly looking ulcer, to be quickly covered and shed in the same manner; there was an uneasy sensation about it all the time, with, as he expressed it, "an occasional gnawing." He had tried every thing he could hear of and consulted a number of physicians without obtaining relief; it was slowly enlarging and this caused him much anxiety. I found the sore about one-sixteenth of an inch in diameter, the surrounding skin slightly indurated, the surface of the cup shaped sore very red, smooth, and filled with serum; he had been advised to consult this cancer doctress, but was undecided what to do. I told him that I was convinced that all she used was common sheep-sorril, and that if he would procure some, press out the juice saturate a piece of cotton and apply twice a day, keeping that put on in the morning in constant contact until renewed at night, until the skin around looked white and shrunken, then poultice, and he would have done all she could do and save 25 or 50 dollars. He "caught on" at once, made the application, and was gratified by the removal of a small hard lump, and the only evidence of its former presence, twelve months after, is a small depressed scar. Whether this result is due to the oxalic acid which is present in this plant I leave for others to determine;

but that the juice will cause the *painful* removal of morbid growths, and is the agent used by some, if not all cancer-quacks, I am fully convinced.

Eltinge, reports a case of epithelioma of the lip cured by the application of the inspissated juice of oxalis acetocella, (*Phil. Med. Times*, xii, 159). King, I believe, says, that it is reputed to possess the power to remove tumors and cancerous growths.

Yours truly,

AMOS SAWYER, M.D.

Hillsboro, Ill, Dec. 29, 1886.

REDUCTION OF INVERTED UTERUS.

TO THE EDITOR OF THE JOURNAL:

Dear Sir:—The reading of Dr. W. W. Jaggard's interesting case of the reduction of a chronic inversion of the uterus by colpeurysis, in the last number of THE JOURNAL (Jan. 1, 1887), revived an old thought of mine, which I have had no opportunity of putting to a practical test, viz., that doubtless more certainty and promptitude as well as safety, in the reduction of inverted uteri, might be attained by the direct application to the protruding fundus and body of mere purely medicinal and dynamical, or physiological agencies, than by mere pressure or mechanical means alone, though they may be usefully combined. Thus, by the immediate application to the inverted fundus and corpus uteri of astringents and stimulants the *vis incita* and tonicity of the uterine tissues might be sufficiently increased to cause contraction, retraction, and reduction of the inverted organ more speedily and easily than by colpeurysis or mechanical measures exclusively. The most promising agents to be thus applied to the everted part are acetate of lead, common potassic alum or iron-alum, tannin, ergot, nux vomica, strychnia, hot-water douches especially, and electricity by current from fundus to sacrum or abdomen. As most of these agents are directly or indirectly active hæmostatics as well as astringents and stimulants, they are specially indicated in cases of hæmorrhages and other defluxions from the uterus. Even if not always sufficient of themselves for the reduction of the inversion, these agents could not fail to be more or less useful in connection with pressure by colpeurysis or otherwise. The same principles and remedies are efficient in relaxation, inversion, prolapsus, and paralysis of the bowels and other parts, and should be likewise effective in this similar abnormity of the uterus. Believing these agents will act effectively, in the speedy and easy reduction of inverted uteri in all degrees and stages, both acute and chronic, I present them suggestively for consideration and trial.

Respectfully,

GEO. J. ZIEGLER, M.D.

Philadelphia, 1887.

ASSOCIATION ITEMS.

THIRTY-EIGHTH ANNUAL MEETING AMERICAN MEDICAL ASSOCIATION.—*Section of Obstetrics and Diseases of Women.*—The following papers are announced for the June meeting in Chicago:

J. E. Kelly, New York, "Lithiasis in Pregnancy."

Charles Meigs Wilson, Philadelphia, "The Technique of Ovariotomy."

Hiram Corson, Plymouth Meeting, Pa., "The Treatment of Abortion."

Wm. T. Taylor, Philadelphia, "Eclampsia."

W. S. Caldwell, Freeport, Ill., "Intra-Uterine Therapeutics."

Geo. F. French, Minneapolis, Minn., "The Chief Source of Danger from the use of the Uterine Sound."

B. E. Hadra, Austin, Texas, "Hysteria and the Ovaries."

The following gentlemen have signified their intention of contributing papers, but have not yet announced the topics:

W. M. McPheeters, St. Louis, Mo.
A. McLaren, St. Paul, Minn.
John M. Keating, Philadelphia, Pa.
W. H. Wathen, Louisville, Ky.
W. H. H. Githens, Philadelphia, Pa.
Howard A. Kelly, Philadelphia, Pa.
W. P. Manton, Detroit, Mich.
A. H. Halberstadt, Pottsville, Pa.

F. M. JOHNSON, M.D., Ch'n.,
Kansas City, Mo.

W. W. JAGGARD, M.D., Sec'y,
2330 Indiana Ave., Chicago.

AMERICAN MEDICAL ASSOCIATION.

FORMED IN 1846.

Next annual meeting will be held June 7th, 8th, 9th, and 10th, 1887, in Chicago, Ill. President, E. H. Gregory, M.D., St. Louis, Mo. Permanent Secretary, W. B. Atkinson, M.D., Philadelphia, Penn. Assistant Secretary, J. Nevins Hyde, M.D., Chicago, Ill. Treasurer, Richard J. Dunglison, M.D., Philadelphia, Penn. Librarian, C. H. A. Kleinschmidt, M.D., Washington, D. C. Chairman of Committee of Arrangements, Charles Gilman Smith, M.D., Chicago, Ill.

All membership dues should be sent direct to the Treasurer, RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Penn.

MISCELLANEOUS.

THE PARIS ACADEMY PRIZES.—The Vernois prize has been awarded to M. Monod for a collection of works relating to Hygiene.

The Amussat prize of 1500 fr. has been given to Dr. Assaky for a work on "The Restoration of Sensibility by Suture of Nerves."

The accrued interest of the Morbinne Fund has been awarded to Dr. Charrin for a Report on the Epidemic of Cholera in the Department of Finistère.

The Desportes prize was not awarded, but M. Du

Castel received a recompense of 1000 fr. for a work on the treatment of Variola, and D. Moncorvo, of Rio de Janeiro, one of 500 fr. for his work on the treatment of Whooping Cough with Resorcin.

The Civrieux prize for a work on Migraine was divided between Dr. L. Thomas, of Paris, and Dr. Régeard, of Paris.

The Huguier prize was awarded to Dr. Charles Perrier for his ingenious treatment of inversion of the uterus.

The Godard prize was divided between Miss Klumpke, "Les Paralysies radiculaires du Plexus brachial," and Dr. Leon Perrin, whose paper was on "Cutaneous Sarcomatosis."

The "Prix de l'Hygiene de l'Enfance," "Relations of Syphilis and Rachitis in Early Infancy," was awarded to MM. Cazin and Iscovesco.

The Academy prize, of 1000 fr., on "Ruptures of the Urethra and their Treatment," was awarded Dr. A. J. Etienne, of Toulouse, with honorable mention of the paper of Dr. Drochon.

The Henri Buignet prize, 1500 fr., was awarded M. Lafon, of Paris, for his "Studies on Digitaline."

The Capuron prize, on the subject "The Relative Value of the Different Methods of Determining the Age of Intra-uterine Life at the Time of Birth; Its Medico-legal Applications," was awarded Dr. Bouillet, of Béziers.

The Fabret prize on the "Relations between General Paralysis and Cerebral Syphilis," is continued for 1887.

The Herpin prize, "Is there an Abortive Treatment of Confirmed Syphilis?" was awarded M. Marcel Crivelli, of Paris.

Louis prize, "Study of the Action of Mercury, Nitrate of Potash, and of Digitaline;" not awarded, but a recompense of 500 fr. given MM. Chautard and P. de Gennes, of Paris.

The Orfila prize, on "Serpent Venom," is continued for 1888.

The Portal prize, on "Exophthalmic Goitre," was awarded Dr. Liégeois, of Bainville-aux-Saules.

The Saint-Paul prize for a specific against Diphtheria; an encouragement of 1,000 fr. to Dr. Alfred Sass, of Paris.

SCHOOL HYGIENE IN AUSTRALIA.—In Australia, says the *Sanitary News*, the subject of school hygiene has received proper attention in the State schools for some years. The teachers are particularly instructed to be careful about the spread of infectious diseases, and the public health law is stringent enough to secure the exclusion of scholars and teachers from houses in which communicable diseases exist. In the State schools of Victoria, since 1879, a system of object lessons has been given with a view of imparting elementary instruction bearing upon the health of the people. These lessons generally include such subjects as food, clothing, ventilation, cleanliness, and the prevention of infectious diseases. There have also been given at stated times lessons for the treatment of snake-bite, for the resuscitation of the drowned, and for the first aid to the injured. The department of education requires some elementary knowledge on the part of teachers upon the subjects of sanitation and physiology, wisely substituting in this connection, the term sanitation for that older and less comprehensive word, hygiene.

IMPURE ICE.—The New York State Board of Health, in a report on the dangers of contaminated ice, draws the following conclusions: Ice formed in impure water has caused sickness; it may contain from 8 to 10 per cent. of the organic matter dissolved in the water, and in addition a very large amount of the organic matter that had been merely suspended or floating in it; it may contain living animals and plants ranging in size from visible worms down to the minutest spores, and the vitality of these organisms may be unaffected by freezing.

CHOLERA IN EUROPE.—The recurrence of cholera in fresh localities in Eastern and Central Europe, says the *Lancet*, is the most striking feature of the present phase of this year's epidemic. Large outbreaks are hardly to be expected in Europe at this season of the year, but it is most disquieting to learn that in certain parts of Austrian and Turkish Croatia, and in some districts of Hungary, fresh places are being attacked. The disease has also taken a fresh stride, in a south-eastern direction, Belgrade having been attacked. According to the latest intelligence, cholera broke out in one of the infantry barracks, and between the 21st and 27th of November there had been fifty cases and ten deaths. The King of Servia, on receiving the intelligence, returned to his capital and personally visited the sick; he at the same time stimulated the authorities to take ample precautions to prevent the spread of the disease. Typhus is also prevalent in Belgrade, so that there is doubtless ample room for sanitary progress.

THE LUMLEIAN LECTURES will be delivered on March 24, 29, and 31, by Dr. Priestley, on the "Pathology of Intra-uterine Death."

THE GULSTONIAN LECTURES for 1887 will be delivered on March 3, 8, and 10, by Dr. Macalister, of Cambridge, on "The Nature of Fever."

SANITARY INSPECTION OF PASSENGER CARS.—DR. R. HARVEY REED, now engaged in making an inspection of passenger cars on railways running in and through Ohio, has forwarded a copy of the blank used. Boards of Health engaged in such inspection would do well to obtain a copy.

KOCH'S RESEARCHES ON CHOLERA have been confirmed and extended by Drs. Tizzoni and Cattani, of Bologna, who have taken advantage of the recent epidemic of cholera in the north of Italy to study the subject.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 1, 1887, TO JANUARY 7, 1887.

First Lieut. H. I. Raymond, Asst. Surgeon, ordered for duty at Presidio of San Francisco, Cal. S. O. 127, Dept. Cal., Dec. 29, 1886.

THE

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EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

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ORIGINAL LECTURES.

ON DIABETES.

A Clinical Lecture delivered to the Students of the Western Pennsylvania Medical College, on October 29, 1886,

BY W. SNIVELY, M.D.,

PROFESSOR OF CLINICAL MEDICINE, PITTSBURGH, PA.

[REPORTED BY R. M. JONES.]

GENTLEMEN:—The case of the young man whom I present for your consideration to-day, affords us an opportunity to study a very interesting disease. I feel certain that many of you will make a correct diagnosis when I read you his clinical history. James G., æt. 25 years, laborer; married, and the father of two children, both living. Height 5 feet 4½ inches, weight 95 pounds. Family history good; father, mother, four brothers and one sister all living and in good health. Previous to eighteen months ago he had always enjoyed good health. Eighteen months ago he contracted a gonorrhœa, which lasted three months. He then weighed 150 pounds. About the same time he began to emaciate and grow weak, and he suffered from sharp pains in his body and limbs. Doctors told him that it was muscular rheumatism, and treated him for that disease, but without benefit. He continued to suffer progressive emaciation and weakness, until about three months ago, he noticed that his urine began to "dribble," wetting his clothing. About the same time it began to increase in quantity, and his thirst became enormous. He could not get enough to drink. His appetite also became proportionally increased, and he could scarcely get enough to eat. Notwithstanding the large amount of food and liquid ingested, he continued to emaciate. He also suffered from obstinate constipation. He took pills, and powders, and capsules, and salts, to physic himself, but without avail; they would not operate. The sharp pains from which he suffered have greatly diminished, but have not entirely ceased. His urine, which I show you, is highly acid; its sp. gr. is 1,030, and during the twenty-four hours ending at ten o'clock this morning he passed 273 ozs. It contains a large quantity of sugar.

You are now in possession of the clinical history of this case. What is the diagnosis? Diabetes. This young man presents *au grand complet*, the five fundamental symptoms, which by their union form the morbid complexus which we term diabetes. 1st, the presence of a notable quantity of sugar in the urine. This we call glycosuria; 2d, increase of the urinary secretion, or polyuria; 3d, increase of thirst, or polydipsia; 4th, increase of appetite, or polyphagia; 5th, emaciation, or autophagia. The four first phenomena are contemporaneous in their appearance; the fifth appears later; there is nothing definite in the period of its development.

The polyuria is the result of physical conditions, easy to comprehend. Glycosuria is not the effect of a pathological work, located in the kidneys; this primordial symptom is the direct consequence of the presence of sugar in the blood in abnormal quantity; there is glycosuria only because there is glycæmia, and this alteration of the blood holds under its immediate dependence not only the glycosuria, but all the other phenomena characteristic of diabetes. The presence of sugar in the blood increases the viscidity and the density of the liquid; in this condition, endosmotic absorption through the vascular walls becomes more active, and there is established a species of intra-vascular aqueous plethora, which is indispensable for the free circulation of the blood. Thus is produced a permanent increase of the intra-vascular pressure, and, in the kidneys, this abnormal condition translates itself by an augmentation of the excretion; this is the first cause of the polyuria. To this physical cause, another of a chemical order is added; the sugar, the elimination of which by the urine is always proportionate to the richness of the glycæmia, can pass through the renal filter only when diluted in a certain quantity of water; this superabundant water is abstracted by absorption from the peri-vascular tissues, and the polyuria is thus maintained at the degree necessary for the elimination of the sugar. This polyuria, the explanation of which has given rise to many different theories is merely the direct consequence of certain physical and chemical conditions. The first link in the pathological chain is the alteration of the blood by sugar, or glycæmia.

In order to make up for the abstraction of water to which his organism is subjected, the patient must ingest a proportionate amount of liquid; hence the polydipsia, the amount of which is always in exact relation to the polyuria. Frank, Christison, and other physicians once asserted that the amount of urine excreted exceeded the amount of liquid ingested. This could not be true, because it would be unphysiological, and it has been demonstrated as incorrect by Griesinger and other observers. This

paradoxical discordance between the amount of liquid rendered and the amount ingested, is quite exceptional and when it exists, is forcedly temporary.

The polyphagia explains itself; it results from the losses which the organism submits in materials, nitrogenous and otherwise; the analysis of the urine reveals at once the necessity and the amount, and permits us to understand the frequent modifications.

The fifth and last essential symptom of diabetes, the emaciation, or autophagia, is not less constant than the preceding, but it varies greatly as to the period of its development. The variations which the emaciation presents, in its appearance and in its rapidity, depends upon the source of the sugar lost by the patient. Take three individuals suffering from well characterized diabetes; their condition is in appearance the same, but a short time will show profound differences in the actual situation of each of these patients. You exclude sugar and starch from the diet of the first and in two or three days the glycosuria will disappear, and so long as the patient restricts himself to this rigorous regimen he has the benefit of this artificial cure.

Exclude starch and sugar from the diet of the second, and the glycosuria does not disappear; it merely diminishes, and this diminution may be quite temporary.

Put your third patient upon the same regimen and he continues to manufacture sugar as formerly.

Here, then, masked by an apparent similitude, are three conditions profoundly dissimilar. The interpretation is clear. The first patient makes the sugar which he loses out of the starchy aliments. The second, at the expense of the nitrogenous aliments. The third, at the expense of himself. What happens in regard to emaciation? The first patient does not emaciate. The second does not emaciate so long as his digestive organs can utilize the superabundant aliment which he ingests; in him polyphagia is a necessity—it maintains the nutritive equilibrium. Patients of this class can resist for months and years without emaciation, so long as the appetite and the digestion can satisfy this exaggerated activity; when the digestion and appetite fail, they emaciate rapidly. The third patient emaciates promptly and fatally, for subjected to a dietetic regimen, he makes sugar at the expense of himself. If you will permit me an alliance of words which render exactly the distinction which I have just established, I will say that the first patient has a starchy glycosuria, and that the other two have a nitrogenous glycosuria, the materials of which are furnished either by nitrogenous food or by the disintegration of their own tissues.

Here is a first point acquired, but this is not all; another condition, too often misunderstood, remains to be considered, if we wish to appreciate the signification of diabetic emaciation. So long as the excretion of urea is not increased, or so long as the increase can be imputed to polyphagia, this is not an additional cause of deterioration for the organism, the equilibrium is maintained by the integrity of the digestive functions; but when the aliments ingested fail to provide for the excess of urea lost, it necessarily follows that this urea has its source in the disintegration of the tissues; it is not only the glycosuria, it is the azoturia which weakens the patient. He lives at the expense of himself, he has autophagia. If we re-examine, from this point of view, the three classes of patients which we have established, we will find that these two causes of consumption are usually united in the same patients. Those who make their glucose but with the starchy aliments, do not present, usually, an increase of urea; they escape both causes of emaciation. But those who make their sugar with their nitrogenous aliments, necessarily draw from themselves a part of the urea which they lose, even when it is not in excess, since the vast proportion of the albuminoid materials which they ingest is viciously employed in making sugar. The precise experiments of Sidney Ringer establish clearly the reality of this autophagic consumption, in showing that the excretion of urea and of sugar continue when the patient is subjected to rigid diet. These are facts, not hypotheses, and must serve as a basis for the interpretation of the clinical differences presented by diabetes.

During the first period, the patient forms his sugar out of the starchy aliments; the nutritive aberration affects only the organic evolution of the starchy matters. Later, in the second phase of the disease, the aberration affects equally the nitrogenous matters, the patient employs the greater portion of them in forming glucose; if the polyphagia can repair the losses, the patient may remain plump, or fail but slightly; the organic budget is still in equilibrium, but it is an artificial equilibrium. In the third period, the equilibrium is broken, the patient employs his food and his own tissues to form sugar and urea in excess; the expenses exceed the receipts, and the bankruptcy of the organism is fatal.

In addition to these fundamental symptoms which we have just passed in review, diabetes presents some secondary symptoms which are subordinate to the primary. We will study them by grouping them according to the pathogenic mode; this method will have the advantage of instructing you, at the same time, of the existence and of the genesis of these phenomena.

Phenomena Dependent upon Glycæmia.—The blood cannot contain an abnormal element in notable quantity without all the liquids of the organism becoming impregnated with it. Griesinger and Semmola have demonstrated it in the perspiration. But perspiration is not often present in these patients; the skin of our patient has been persistently dry. Griesinger demonstrated a superabundance of sugar in the perspiration of patients in whom the urinary sugar had greatly diminished without corresponding amelioration in the general condition. The complementary elimination compensated for the diminution of the glycosuria; this teaches us that we must not judge the losses of our patient simply by the examination of the urine. The saliva often contains sugar, and it is to this alteration of the buccal liquid that the lesions of the gums and teeth, so frequent in these patients, have been attributed. Our patient has yet pretty sound teeth, but their preservation is perhaps due to his youth.

Impotence is another effect of glycæmia. In some cases the desires are preserved, the venereal act is possible, but it is sterile, for the spermatozoa cannot preserve their activity in a liquid containing sugar; this is sterility, not impotence, but in some patients true impotence exists, with or without anaphrodisia.

It is to the abnormal state of the blood, and to the modifications of the endosmotic exchange between the intra- and the extra-vascular liquids that we must attribute the peculiar predisposition of these patients to the cutaneous and visceral inflammations, and to gangrene. Of the superficial phlegmasias, the most frequent are furuncles and carbuncles. Some physicians, stricken with the frequency of this coincidence, have gone so far as to say that every individual attacked with furuncle or carbuncle, is necessarily the victim of glycosuria; this is erroneous; the frequency of the relation is great, the constancy is not a fact. Nevertheless, in practice we should examine the urine of every patient affected with this species of phlegmasia, and this rule is so much the more important because they are precocious accidents, and may lead to the discovery of a diabetes. The frequency of this complication is so common in Brazil that it is known to the common people, who reason invariably from carbuncle to diabetes. Our patient affirms that he has never suffered from these complications.

The most frequent of the visceral inflammations is pneumonia, which is characterized by its chronicity; often it is chronic from the beginning; besides, when it does present first in the acute form, resolution does not follow the fall of the temperature, the lesion persists and slowly submits the histological modifications proper to the regressive evolution of pulmonary hepatization. This pneumonia terminates quite frequently in gangrene, and this pulmonary gangrene, like the other visceral modifications sometimes encountered in the course of diabetes, have not the characteristic odor of common gangrene. This fact has been verified by a great number of observers.

Visceral gangrenes are not the only ones produced by diabetes; the carbuncles and furuncles of which I have spoken to you, have a marked tendency to sphacelus; in fact, so great, in this respect, is the pathogenic power of glycæmia, that we frequently observe gangrene of the inferior members, which was long considered spontaneous gangrene. The relation of these peripheric gangrenes to diabetes, is to day well known, and the knowledge of this important fact has given rise to an error, the inverse of that which was previously committed. Some observers think that senile gangrene always depends upon diabetes. This assertion is an exaggeration. I have seen, myself, two cases of gangrene of the toes without glycæmia, and these cases are not isolated. Remember the frequency of this relation, but do not believe in its invariability.

Phenomena Dependent upon Glycosuria.—The irritation resulting from the frequent miction of sugary urine is apt to cause redness of the meatus, and a pruritus sometimes insupportable; eruptions of prurigo and herpes often exist in this connection, and may become generalized. In the male, swelling of the prepuce, phimosis and balanitis are sometimes observed. None of these symptoms exist, or have previously existed in our patient; they have no signification from a prognostic standpoint but they have a very great signification for the diagnosis. When you observe these manifestations, you must always examine the urine.

Phenomena Dependent upon Polyuria.—Polydipsia, which we have already discussed, is not the only disorder dependent upon polyuria; to this cause we must refer the obstinate constipation and the dryness of the skin and mucous membranes. Our patient, as you already know, has suffered greatly from these conditions.

Phenomena Dependent upon Consumption.—Phthisis is one of the most common results of the diabetic condition; according to Griesinger, nearly one half of these patients succumb to tuberculization of the lungs. Clinically, diabetic phthisis is distinguished by the almost constant absence of hæmoptysis, by the rapidity with which excavations are formed, and the limited amount of the secretions. It is not rare to see patients with large caverns expectorate almost nothing at all. Our patient presents a striking example of this condition. Two eminent English observers, Wilks and Pavy, contend that the pulmonary caverns of these patients are due to the elimination of chronic pneumonic foci, and not to the presence of tubercles. The utilization of a large number of autopsies can alone settle this problem in pathological anatomy.

Visual troubles, as cataract, so frequent in these cases, are probably to be attributed to the consumption, or rather to the insufficiency of nutrition. Cataract occurs late in the disease, and operative treatment is rarely or never successful.

Diabetes is a condition of long duration. The reported cases in which death occurred in a few weeks are quite exceptional. Generally its progress is uniform and continuous; sometimes remissions occur, lasting a few weeks or months, which have probably been prematurely reported as definitive cures. According to Griesinger, who analyzed a total of 225 cases, the average duration of the disease is two or three years.

The diagnosis is to be based upon the discovery of sugar in the urine. This is a very simple matter when we are led to look for it; what is important is to be conducted to the presumption of the disease. The situation of the physician is the same as for Bright's disease. The affection does not reveal itself openly; it is necessary to suspect it. In order to make an early diagnosis of diabetes, you must be acquainted with the semiological value of certain phenomena which are indications sufficient to demand an immediate examination of the urine.

The polyuria, the insomnia which it produces, the increase of thirst, particularly if it coincides with that of the appetite, are symptoms the signification of which cannot be misunderstood; but there are other circumstances, less demonstrative, which are of real value; these are the pruritus, urethral or vulvar, the swelling and the eruptions of the prepuce or

of the labia, the generalized pruriginous or herpetic eruptions, the *fishy* condition of the linen and clothing. All these conditions, slight as they may appear to you, demand an examination of the urine. So with furuncles and carbuncles, you must think of diabetes and look for sugar.

But, when you have found sugar in the urine, in notable quantity, you are not justified in reporting it as a case of diabetes. Glycosuria is a symptom, and diabetes is a condition which has this for one of its symptoms; it is not constituted by this phenomenon alone. Prolonged observation may be necessary to prove the true character of a glycosuria. The glycosuria which sometimes follows cephalic traumatisms, or certain diseases of the spinal cord, are usually simple, although accompanied by polyuria and polydipsia, but this is not always so; a glycosuria of traumatic origin may become the point of departure of diabetes in an individual predisposed. The diagnosis must in every case be based upon the quantity of glucose lost, upon the other modifications of the urine, upon the constitutional symptoms, and upon the effect produced by diet.

The causes of diabetes are far from being completely elucidated; pathological anatomy has revealed no constant and characteristic lesion. Alterations of the kidneys, analogous to those of Bright's disease, are most frequent, and are probably due to excess of function, and to the irritating character of the excretion. Atrophy of the pancreas has been observed. Dilatation of the stomach with hypertrophy of the muscular coat, when it occurs, is probably due to polyphagia.

Hereditary influence must be a very unimportant factor, if we are to judge from the small number of cases adduced in support of it. I am cognizant of the case of a man, at present suffering from diabetes, whose son, a boy of 7, died a few years ago from this cause. Griesinger's analysis of 225 cases would seem to show that intermittent fever, gout, rheumatism, typhoid fever, pleurisy, scarlet fever, etc., may be probable causes. I am disposed to believe that psychical causes, and particularly worry and mental depression, may exert an exciting influence in an organism predisposed to it.

A short time ago, a young man was admitted to the Western Pennsylvania Hospital. He was suffering from diabetes, which ran a rapid course, terminating fatally in less than a year from the time of its supposed commencement. No reasonable cause could be assigned for the disease, but after his death we learned that he had been engaged to a young lady whose mother refused her consent to the marriage. He became melancholy, morbid and depressed, gave up his work, began to fail physically, and was admitted to the hospital in the condition stated. You are not to infer from this that every young man who fails to marry the object of his affections, will develop a diabetes. Our patient, as you already know, contracted a gonorrhœa about eighteen months ago; he has confessed to me that he suffered terribly, both in mind and body, from this cause, and that he was in terrible fear lest his wife should find him out; he attributes his present condition entirely to this cause. You are not to infer from this that every married man who contracts a gonorrhœa, and suffers from worry and mental depression in consequence, is going to have diabetes. In our ignorance we explain this by saying that these two individuals were *predisposed* to diabetes, and only required an exciting cause to stimulate into action the pathological work which forged the first link in the pathological chain, glycæmia. This morbid predisposition, we suppose, exists in the sympathetic nervous system. You may not consider this very valuable or practical information, but it is the best I can furnish you regarding the causation of diabetes.

I have said nothing of cephalic traumatisms, for the reason that they pertain to the etiology of glycosuria rather than of diabetes; the same remark is applicable to the ingestion of amylaceous foods in excess, to the poisons, curare and strychnia, and to chloroform.

When the famous experiments of Claude Bernard demonstrating the fact of hepatic glycosuria were given to the world, his conclusions were soon made the basis of a new theory of diabetes. But the clinic showed diabetes present with a liver perfectly healthy, and diabetes absent with livers variously diseased. You remember that at our last clinic, I tapped an ascites which was due to atrophic cirrhosis. That man has never had a symptom of diabetes. In addition to these clinical facts, the sixty-four autopsies of Griesinger show us the liver very often normal, sometimes atrophied, and very rarely congested or hypertrophied. Thus you see that pathological anatomy furnishes important evidence against the hepatic theory of diabetes. In addition, Prof. Schiff and others demonstrated the reality of the fact advanced by Pavy, that the production of sugar in the liver is a post-mortem phenomenon; that in a physiological condition, the liver does not make sugar. It fixes and contains glycogen, but the transformation of glycogen into sugar is a pathological or cadaveric phenomenon.

We now come to the most unsatisfactory part of our subject, the treatment. In the first phase of the disease, when the patient is making his sugar at the expense of the starchy foods, the treatment is to be dietetic and hygienic; benefit will be obtained by excluding the starchy, and the employment, to the greatest extent compatible with good digestion, of the nitrogenous foods. Rest, recreation and judicious bodily exercise must be enjoined also. But if he is making his sugar at the expense of the nitrogenous foods, or at the expense of his own organism, dietetic and hygienic measures will be as useless as drugs.

With the exception of pulmonary caverns, our patient presents absolutely none of the secondary symptoms which I have described to you, and you might be led to believe from this, that his case was still amenable to treatment. The absence of all these symptoms is not unusual; we are not dealing with a morbid species, but with an individual case, and, unfortunately, this particular patient is suffering from autophagia; he is making his sugar at the expense of his own organism. The prognosis is absolutely grave; nevertheless, we must not abandon him to death with-

out effort; we will submit him, as rigorously as is practicable, to a dietetic and hygienic regimen, we will endeavor with anodynes to relieve the suffering from insomnia, and we will employ the potassium bromide for this purpose. During the past two years, a preparation called *arsenite of bromine* has been highly recommended through the medical journals for its efficacy in the treatment of this disorder. It has received the endorsement of some of the leading physicians of the country; for this reason, we will give our patient the benefit of a trial of the drug, and I shall keep you advised of the progress of the case.

A word more, gentlemen, and I am done: When you go out into the world to practice your profession, you will probably write occasionally for the medical journals. Do not then, prematurely, report cases of diabetes, because if you do, you will probably report some cures, due to some peculiar method of treatment. These will likely be regarded by a majority of your readers as the result of mistakes in diagnosis, and you will be looked upon as incompetent observers. Observe your cases closely and patiently, and thoroughly investigate all the phenomena connected with them, before you decide upon giving your diagnosis, and the recommendation of a specific to the profession at large.

ORIGINAL ARTICLES.

PARALDEHYDE AND URETHAN.[1]

BY H. B. WILLIAMS, M.D.,

ASSISTANT PHYSICIAN ARKANSAS STATE LUNATIC ASYLUM.

Every day sees a new remedy come to the front as a candidate for favor in the medical world. Some of them prove to be of value, and take their proper place in the armamentarium of the skilful, thoughtful physician. I desire to call attention to two new hypnotics which are awakening interest among neurologists more particularly, and which have been used in the State Lunatic Asylum.

The first is *paraldehyde*, a methylic ether, an exceedingly volatile liquid, somewhat resembling the compound spirit of ether of the Pharmacopœia; it has a pungent, penetrating odor, and its taste resembles that of sulphuric ether. In regard to its chemistry, method of preparation, etc., I quote from a letter of Prof. C. O. Curtman, of St. Louis, to Dr. P. O. Hooper:

"Paraldehyde is the condensation product of ordinary aldehyde and hydrochloric acid, hence $(CH_3, CHO)_3$. It is formed by adding to pure aldehyde a small amount of hydrochloric acid, when the condensation takes place with evolution of heat. (With even a small amount of sulphuric acid, the reaction occurs with explosive violence.) The product is cooled by ice till it solidifies, is then pressed to free it from acid, etc., filtered off and finally distilled. It boils at 253.7° F. It dissolves in 8.3 parts of water at 55.4° F., less in hot water. Distilling with sulphuric acid reconverts it into ordinary aldehyde."

Dujardin-Beaumetz says of it: In strychnia poisoning, delirium tremens, and uræmic convulsions, paraldehyde is superior to chloral. Cervello says: Paraldehyde affects the cerebrum, the spinal cord and the bulbus, successively abolishing the reflexes, causing anæsthesia and sleep by anæmiating the brain and cord. It is eliminated by the lungs. It is not a cardiac poison.

I may add, that in no instance have I seen interference with respiration result from its administration. At the Lunatic Asylum, we have used the drug as a hypnotic to allay excitement, and to control epileptiform seizures in one instance. The results obtained have been very gratifying. It is administered in doses of from 30 to 75 minims. I, however, usually give ʒj. A single large dose acts better than frequently repeated small doses.

In simple insomnia, in ʒj doses, it has acted for me like a charm, while in mania accompanied by great excitement, the results have been almost uniformly satisfactory. When the solution is freshly prepared and is administered without more than momentary exposure to the atmosphere, sleep, in nine out of ten cases, has been produced in from three to fifteen minutes. In the few instances in which no effect followed its ingestion, it was repeated in one hour and the desired result produced. The sleep produced is sound, refreshing, and to all appearances natural; it lasts from three to eight hours, and in my experience has never been followed by nausea, headache, anorexia, constipation, or any symptom of deranged function.

In recurrent mania attended with great excitement, restlessness, and persistent insomnia, it has seemed to me to shorten the duration of the paroxysms. In such cases it was administered nightly and sometimes had to be repeated, but in no instance has a tolerance been established. In one case of acute illness, where the patient was much emaciated, very weak, wildly delirious, and suffered from persistent insomnia which chloral failed to relieve, a single dose (ʒj) of paraldehyde produced a natural sleep of eight hours' duration, from which the patient awaked refreshed and improved. On the two succeeding nights he received the usual dose, and each time with like results. On the fourth night he slept soundly without a hypnotic of any kind, nor did he require one subsequently.

Again, in a woman, the victim of chronic mania, who was also in the last stages of pulmonary tuberculosis, paraldehyde produced sleep and quietude repeatedly and without untoward effect. I have used it but once to control the paroxysms of epilepsy. The history of that case is as follows: The patient, who has suffered from epilepsy for years, having two or three attacks weekly, suddenly had an increase in the number of paroxysms. For two days he had from one to three seizures hourly, and became totally demented. Potassium bromide in heroic doses had no influence over the seizures, while ʒj of paraldehyde caused a complete cessation in less than twenty minutes; this cessation was accompanied by a sound sleep of six hours' duration, from which the patient awakened improved in every respect

In epileptic mania in which paroxysms of epilepsy were not numerous, I have used paraldehyde for its

[1] Read before the Medical Society of Arkansas, April, 1886.

calmative and hypnotic effects, and in only one instance did failure result. In that case the patient was taking f. e. ergot and potass. bromid. for the epilepsy. In several instances, I have awakened the patient within a half hour or an hour after the ingestion of the drug, and found he would talk sensibly, but as soon as he was left undisturbed, he relapsed again into sleep.

In a case of chronic mania in a man who has a lesion of the mitral valve, compensatory hypertrophy of the heart having taken place, the paraldehyde gave most excellent results. I would state parenthetically that chloral has frequently been administered in this case without ill effects. Sometimes chloral produces a state of intoxication which forces the patient to occupy the recumbent posture, but neither allays excitement nor produces sleep. In this class of cases paraldehyde is invaluable.

The method of administering paraldehyde is important. It can be given in mucilage, syrup or whiskey, preferably in whiskey. At the Lunatic Asylum we give one part paraldehyde in three of whiskey. No difference in the action of the drug is perceptible when mucilage or syrup is used as the menstruum, instead of whiskey. Whiskey disguises the taste and in a great measure conceals the exhalation of the drug on the breath. This exhalation, when not obviated by whiskey, is almost intolerable and continues for several hours. I have noticed it twelve hours after the ingestion of the drug.

Paraldehyde must be kept in glass or rubber stoppered bottles, and must be taken as soon as poured out; otherwise disappointment will follow its use.

That paraldehyde will supersede chloral I do not believe, but that it will rank as a good reliable hypnotic, particularly where chloral and opium are contraindicated by personal idiosyncrasies, I am confident.

Another fact: paraldehyde is not an analgesic, and in insomnia due to pain is worse than useless.

Now, a few words on urethan, another hypnotic which promises to be as valuable as paraldehyde.

Urethan puriss. (NH_2, CO_2 C_2 H_5) is the ethylic ether of corbaminic acid; comes in white crystals, odorless, easily soluble in water, and has a sweetish bitter taste. Its hypnotic value has been tried in cases of rheumatism, gout, catarrh, neuralgia, skin diseases with irritation, general restlessness and sleeplessness. As a rule, the results were excellent, no unpleasant after-effects having been caused in a single instance. Urethan is an analgesic, as is shown by its action in gout, rheumatism, etc. Its action is chiefly on the cerebrum, and it has no influence on the medulla oblongata or cord. No interference with the action of the kidneys or bowels has been noticed.

The dose of the drug is 15 grs. I have used it only in insomnia of mania, and have found sleep result uniformly after the ingestion of the above-named dose. As toxic symptoms have never as yet been produced by the drug, I can tell you nothing of them, nor of the amount necessary to produce them. I have seen sleep, apparently natural, as the only result of the administration of urethan. If the promises which urethan holds out are fulfilled, it will prove an addition of very great value to our materia medica.

SHORTENING, BY OPERATION, THE BONES OF THE LIMBS IN THE TREATMENT OF INJURIES COMPLICATED WITH EXTENSIVE DESTRUCTION OF THE SOFT PARTS.

BY WILLIAM D. HAMILTON, M.D.,
OF COLUMBUS, OHIO.

In the issue of THE JOURNAL of August 14, 1886, page 176, appears an abstract from the *Gazette Médicale de Paris*, under the above title. Dr. Martel, of St. Malo, saw a patient June 2, 1885, with severe compound fracture of the leg. Anteriorly was a large wound, whose extent was due to actual destruction rather than to retraction of the skin and subjacent tissues. On February 25, 1886, he made an oblique resection of both bones of the leg. On March 25 union had occurred; April 25 consolidation was complete. August 3 two ulcerated spots remained, which soon healed. The author is only cognizant of a single case like his own: that of Karl Loebker, who, in 1884, resected the radius and ulna in continuity. My own case was reported to the Central Ohio Medical Association on the first day of last April, the patient being presented at the time for examination. I first saw her with Dr. Lewis Hoover, of Grove City.

L. S., æt. 10, was caught by the sickle of a reaper July 16, 1885. Her left leg was almost cut in two at the junction of the lower and middle third. The lower fragment was bent at right angles to the upper one. An ugly lacerated wound had been inflicted. It was irregularly rectangular in shape, the greatest length being at right angles to the axis of the limb. It was 2¼ inches broad in the continuity of the leg, and 5 inches long. It included at least two-thirds of the circumference and involved the anterior and outer aspect. The soft parts in this area were extensively destroyed to the level of the deeper posterior layer of muscles. Both bones were comminuted in their whole diameter. The periosteum was denuded from the upper fragment of the tibia for three-fourths of an inch. Nearly everything lying in front of a plane passing posterior to both bones was destroyed for 2¼ inches in the continuity of the extremity.

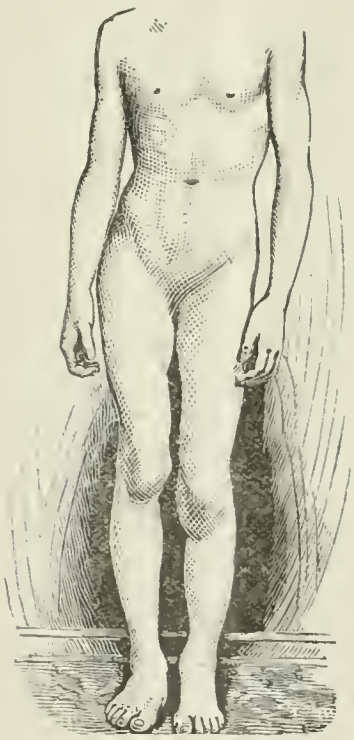
The wound was washed with a 1–3000 bichloride solution. To check the hæmorrhage, which was quite profuse, the divided ends of the anterior tibial artery were tied with gut. The periosteum was well retracted and a transverse, even division of the bones was made above and below the injury, and the intervening fragments were dislodged. It involved the removal of two inches of both tibia and fibula. Neat apposition was secured without wiring or suturing. Several layers of over and over gut stitching united the edges of the wound. A small opening was left in the lower angle for drainage. No tube was used. Thorough irrigation was followed by the use of iodoform gauze and other antiseptic absorbent dressings. A padded posterior splint with a bandage over-all, secured immobility. The temperature was normal, or nearly so, from the third day. There was no sloughing. On the 19th and 23d of July the dressings were changed. August 7 she sat

up and a plaster dressing was adapted. There was neither pain nor spasm during convalescence. Everything was taken off on October 19.

For several months the temperature of the limb was lowered. It had a dusky hue, its nutrition and innervation being seriously impaired. The complete division of the anterior blood vessels and nerves left everything to be done by the posterior group. When first seen, mortification seemed imminent. The operation had two things in view:

1. To prevent gangrene and save the limb by inducing prompt union throughout; the idea being to remove bone which occupied the gap, and which, being the focus of inflammation and suppuration, threatened the posterior blood and nerve supply. 2. Or to anticipate a probable long siege of periostitis, ostitis, necrosis or osteo-myelitis.

The accompanying cut shows the patient thirteen months after the injury. Both heels are on the floor, which gives a clear conception of the postural deformity. The following measurements are further explanatory of the result:



	Left. (injured)	Right.
Circumference over cicatrix	7½ in.	
Length of cicatrix	4 "	
Distance from head of fibula to outer malleolus	10¼ "	12⅛
Distance from upper ext. of fibula to internal malleolus	10⅛ "	11½
Circumference of calves	8¾ "	10⅞

Dr. Martel is to be congratulated on his good result. His operation was a *secondary* procedure; *this* was *primary*. It would not pay to try to generalize with these three cases for a text. They may be sufficient to raise a question, however, as to the propriety of exsection in certain bad cases of compound fracture.

No. 126 E. Long St., Columbus, O., Sept. 9, 1886.

LAPAROTOMY FOR REMOVAL OF MONOCYST OF OVARY.[1]

BY T. W. HURLEY, M.D.,
OF BENTONVILLE, ARK.

I saw for the first time, and examined Mrs. H. in consultation with Dr. Hartly Weems, of Rogers, in October, 1885.

Patient æt. 36, married nineteen years; no children, no abortions; physical condition fairly good; has had an abdominal tumor for very nearly two years. No cachexia. A tumor of considerable size was felt in the abdomen, reaching about six inches above the pubis, and mainly in left side. Bimanual exploration gave but little pain.

The character of the tumor was explained to the patient, and she was told that nothing short of an operation would afford any permanent relief. As the disease progressed it became more and more painful, and we were frequently importuned to operate. A puncture was spoken of, but the patient, on being told that the procedure would in all probability be only palliative, insisted on a radical operation. An operation was determined on and the patient put on preparatory treatment, mainly tonic and hygienic. Drs. Welch and Gray, of Fayetteville, were requested to meet us in consultation on January 18, 1886. After careful examination and consultation an operation—ovariotomy—was concurred in, and 10 A.M. the next day the time for the operation.

Ten o'clock A.M., January 19. The patient, seeming cheerful and in good condition, was placed upon the table, and Drs. Gray and Weems administered a mixture of chloroform and ether. The patient was one of the most difficult to bring under its influence, requiring an hour and fifteen minutes to properly anæsthetize her.

Assisted by Dr. Welch, abdominal section in the median line was made, and a large monocyst which had developed from the left ovary was exposed. The cyst was partially evacuated, drawn out as nearly as possible and cut off. There was no pedicle, and very little adhesion. The intra-abdominal wound was well constricted by silk suture with several threads, and left in the abdomen. The external wound was closed and dressed antiseptically. The toilet being completed, the patient was carefully taken from the table and placed upon the bed. The patient, at this time having returned to consciousness, did not seem to be in an unfavorable condition; but in about half an hour was observed by Dr. Welch to be in an alarming state—extreme pallor, cold surface, frequent pulse, and feeble respiration. In addition she showed a marked and unceasing restlessness, to which succeeded vomiting and painful eructations. These symptoms, with but one short respite—when the temperature rose to about 100°, and soon falling below 96°—presaging a fatal issue, which finally occurred from total collapse at 8 o'clock P.M. the 20th, about thirty hours from completion of the operation.

I think I may say now that the difficulties and

[1] Read before the State Medical Society of Arkansas, Eleventh Annual Session, April 28, 1886.

dangers in this case were largely due to the very extensive origin of the growth, there being no well-defined pedicle, and consequently a very extensive ligation of tissue. It is true that this should not ordinarily produce a disastrous result, and I have the report of a case in which a rapidly growing ovarian tumor—only having been noticed by the patient six weeks—in which the operation was prolonged from numerous adhesions and the bursting of a cyst, the pedicle broad, which was ligated *in sections* with shoemaker's thread, and yet the patient did well. I think that the very profound and almost immediately fatal shock, together with bad toleration of the anæsthetics used, the effects of which persisted to the last, were the chief factors in the fatal termination of this case.

That an operation was justifiable there can be no doubt, as the patient repeatedly solicited it, and no other procedure could have with any certainty given a hope of prolonged life. And I may say the above opinions are fully concurred in by Drs. Welch and Gray, to whom Dr. Weems and myself are under many obligations for the valuable assistance rendered in the case.

PERMANGANATE OF POTASH IN THE TREATMENT OF ECZEMA.[1]

BY W. B. LAWRENCE, M.D.,
OF BATESVILLE, ARK.

In the *Medical and Surgical Reporter*, of July 11, 1885, I read the following in regard to "Permanganate Potash Baths:"

"In June, 1879, a well-developed child, of two years of age, was brought to Dr. Hüllman *(Archiv. für Kinderheilk*, Band vi, Heft 3), covered with eczema and impetigo. He had been sent from Berlin to Halle to try the baths there, but after three weeks he was worse instead of better. He was therefore prescribed an immersion-bath of permanganate of potash of the strength of fifteen grains to a pail of water, the child to remain in it until the fluid began to turn brownish. Fourteen days afterwards he was cured. Since then Dr. Hüllman has used the remedy both in adults and in children, and mostly with good effect. He has not confined its use to eczema, but has also employed it in prurigo, intertrigo, and the desquamating stage of measles, scarlatina and varicella. When the skin is much covered with scales or scabs it should first be well brushed with soap and water. For convenience of use he keeps a concentrated solution made of hot water."

At the time I saw this short article I had under treatment a very stubborn case of chronic eczema. I say chronic, because it was of almost three months' duration. It covered nearly the entire surface of all the fingers on one hand. The patient, a married lady, and in perfect health otherwise, had a hereditary predisposition to eczema. I had about exhausted all of the remedies generally used in this disease, so far as my knowledge goes. I had prescribed the tar ointment, citrine ointment, and others, besides nitric acid, with which I have cured similar cases heretofore; and in addition to the local remedies the patient had been taking liq. pot. arsenitis, 6 to 8 drops after each meal.

Under this treatment my patient's malady did not improve in the least, but gradually grew worse. Anxious to try anything reasonable, and remembering the good effects claimed for this drug in the treatment of some forms of foul ulcers, I ordered the following:

℞ Potassii permanganas..... grs. x
Aquæ..... ℥ j

The solution to be applied freely daily with a camel's-hair brush. Under this treatment the disease entirely disappeared in about twelve days. Of course the new skin remained somewhat tender for some days. She left off the arsenic when she began the potash.

I think it was in September that I treated another case of eczema. The patient was a young lady, and in other respects her health was perfect; no hereditary tendency, so far as I was able to find out, of any form of skin disease. The disease was on the face, in the region of the mouth, in fact almost covering both lips. She had used iodine and carbolized cosmoline, but with no good effect. I ordered

Pot. permangs..... grs. v
Aquæ..... ℥ j

The solution to be applied freely daily with a camel's-hair brush. Under this treatment the patient was cured within fifteen days.

In December I saw another case. The patient, a child one year of age, a male, well developed, and with the exception of this skin disease in perfect health. The disease was situated in the external ear and extended to some little extent down on the jaw. I ordered same formula as last, to be applied in the same manner as in the two previous cases, and within a week's time the disease had entirely disappeared.

[1] Read before the State Medical Society of Arkansas, Eleventh Annual Session, Little Rock, April 28 and 29, 1886.

NARCEINE IN WHOOPING-COUGH.[1]

BY LLEWELLYN ELIOT, M.D.,
OF WASHINGTON, D. C.

Whooping-cough is one of the most distressing diseases of childhood, although it has been observed in adults. It seldom occurs before the sixth month of life, nor is it frequent after the eighth year. Second attacks are exceedingly rare. Barthez and Rilliet mention a case occurring on the day after birth, the mother having had the disease four weeks previously. Bouchet mentions a case infected on the second day of life, developing on the eighth. Keating records a case of a child born with the disease. Steiner has seen it between the second and third weeks.

The pathology of the disease is unsettled, but it appears to be a catarrh of the respiratory organs, combined with an affection of the respiratory nerves, rather than a pure neurosis. This unsettled pathology has led to the employment of remedies without

[1] Read before the Medical Society of the District of Columbia, December 8, 1886.

number. Among them may be mentioned hydrocyanic acid, potassium bromide, ammonium bromide, hyoscyamus, digitalis, alum, lobelia, ipecac, potassium bicarbonate, belladonna, atropine, opium, morphine, musk, sodium et aurum chloride, cocaine, tartar emetic, insufflation and inhalation of quinine. Success and failure have followed the use of each.

In the *Medical Record*, of July 17, 1886, is an editorial on the treatment of whooping cough, and among the remedies mentioned is narceine. This alkaloid was introduced as a remedy for this disease by Laborde, as far back as 1869, but the physicians of Philadelphia who employed it about ten years ago failed to obtain the results which were claimed for it. The recent visitation of the disease has afforded me a peculiar experience.

It was my intention to thoroughly test this treatment; my reasons for not doing so will be seen from what follows. On July 12, W., born July 3, showed symptoms of whooping-cough, his mother having contracted the disease five days before his birth. He was given on the 19th the following prescription, other remedies having failed to afford relief:

R. Narceine..... 0.133 gm. (gr. ij).
Aq. destillat..... 8 c.c. (℥ij).
Syr. acaciæ..... 40 c.c. (℥x). M.
Sig. Teaspoonful every three hours.

This would make the dose .0110 gm. (gr. 1/6) the minimum, but to insure safety only 1/4 of a teaspoonful was given three times a day. Following the second dose there was a decrease in the quantity of urine; the dose was then lessened to 5 drops with the following results: entire suppression of urine, great drowsiness, refusal to nurse, constipated condition of the bowels and great restlessness. The urine not being voided from 4 in the evening till 6 in the following evening, he was given .0016 gm. (1/60) podophyllin every three hours until the bowels were freely moved; 5 drops of spirits of nitre every two hours, and hot poultices to encircle the entire abdomen. This continued until 12:30, when the bowels were acted upon freely and the urine voided; at 8 he again passed urine; the nitre was then continued at four-hour intervals. The whooping-cough was not benefited in the least. Possibly, had the narceine been continued, the effect might have been different, but with such a state of affairs as here presented I could not have the hardihood to do anything which would tend to increase the unfavorable outlook.

This is one experience with narceine. The dose may have been too large, .0025 gm. (gr. 1/24), if so, the condition should have altered when it was lessened. I have no intention of doubting the results obtained by other observers, nor of questioning the reports made concerning the use of "Narceine in Whooping-cough," but I cannot refrain from making known the unfavorable result which followed at my hands. After the effects of the narceine wore away, the child did as well as one so young could be expected upon alum and syrup of wild ginger, to finally have violent convulsions and die on August 2.

510 E. St. N. W., Dec. 8, 1886.

HOSPITAL REPORTS.

MYOFIBROMA UTERI.

CLINIC OF PROF. ROKITANSKY, OF VIENNA.

[Reported by HORATIO R. BIGELOW, M.D.]

G. H., 48 years old, married fourteen years. For over one year has had the menses every fortnight, but not very abundantly. Has had four difficult labors, the last one ten years ago. Three weeks ago had a strong hæmorrhage. On the right side of the abdomen there is an ulcer. She is anæmic, small and thin. The lower half of the abdomen is vaulted out by a solid, elastic, circumscribed, movable tumor, not painful, the walls of which are flat and extending out of the pelvis. Vagina of normal length. The vaginal portion of the uterus is long and broad. The anterior lip is thickened. The posterior lip is flat and thin. Bi-lateral cervical laceration. The interior surface of the anterior lip is soft and swollen; bleeds easily. Through the anterior vaginal roof the enlarged fundus can be detected easily. Circumference around abdomen, four fingers width under navel, 80 ctm.; uterus 27 ctm.

On account of violent hæmorrhage she was at once received into the hospital, but was soon after discharged, as the bleeding stopped and as she did not wish to be operated upon. On November 18, 1885, the patient returned to the hospital. After she left the hospital the hæmorrhage returned, and was profuse for five days. Since this time the patient complains of violent pains throughout the abdomen. Examination *per vaginam* shows a soft, œdematous vaginal portion, and the tumor is more painful than formerly. The bladder is distorted toward the right side, and has a peculiar form. On the right side the probe passes easily up in a vertical direction over the anterior superior oss. il. to a level with the navel; on the left side the probe was only about 3 ctm. over the sym. pubes, and through the uterine walls could be felt in the linea alba. On November 21 the patient complained of violent pains in the right side. There was a painful spot over the ninth and tenth ribs, but she had no other signs of pleuritis.

On November 23 the pains ceased entirely, but the patient was unable to lie on the right side. Early on this morning the patient took a hip bath, then the mons veneris was shaved, and the patient had another bath. The abdominal parietes were covered with a linen cloth, moistened in a two per cent. carbolic solution, which was left *in situ* 20 hours. Temperature 37° (R), pulse 100.

On November 20 temp. 37°, pulse 105. Carbolized sitz bath.

Operation.—Chloroform. The primary incision, made with great care to avoid wounding the bladder, extended from the navel to within 3–4 ctm. of the sym. pubes. Parietal adipose 2 ctm. thick. Arteries caught with forceps. When the tumor was disclosed it was found to be smooth, and not adherent to the anterior uterine wall. The incision was found to be too short for its enucleation, so it was extended to a total length of 25 ctm. In the peritoneum was a

little ascetic fluid. As the tumor extended so deeply into the pelvis it could only be partially enucleated, the adhesions having been separated. The bladder was adherent to the tumor and was distorted, as already described. The peritoneum for about 3 ctm was separated from the floor of the bladder by the Paquelin cautery, and the bladder freed. The broad ligament was ligatured with silk in three parts, and divided between with the Paquelin. The tumor was drawn out as far as possible, and at the height of the cervix was ligatured with the elastic tubing. The anterior uterine wall was now incised in a medial line, from the fundus to the ligature, and the tumor enucleated down to the ligature. It was found that this intra-mural fibroid extended down to the anterior cervical lip. All above the ligature being removed with the knife, the upper angle of the fundus was provisionally sewed up, and the wounded edges of the uterus were seized with hæmostatic pincettes. Under the elastic ligature a Chaunenac chain was thrown, and the rest of the tumor was enucleated. Drainage *per vaginam*, by means of a thick trocar with a drainage tube drawn after it. The elastic tubing was now entirely removed, and after trying in vain to apply the chain, which tore through, a thicker and permanent elastic tubing was applied, and the uterus amputated. The stump was transfixed with two long straight needles and secured in the lower angle of the wound (extra-peritoneally). Rapid peritoneal toilette. Sublimate silk ligatures used. Duration of operation, two hours. Iodoform powder and iodoform gauze and sticking plaster were used in external dressing.

The stump was painted every day with a concentrated solution of ferr. sesquichl. A one per cent. sublimate irrigation was used in the vagina for several days. For the first few days the urine contained a considerable quantity of phenal. Vagina then packed with iodoform gauze. On the ninth day the stump was cut off with scissors, the cavity cleansed and treated with iodoform. On January 3, 1886, forty seven days after the operation, patient was discharged as cured.

MEDICAL PROGRESS.

LEPROSY.—The Hawaiian Legislature, in its determined efforts to try to control the spread of leprosy in the islands, was fortunate in securing the valuable services of DR. EDWARD ARNING for purposes of special research. He found the bacillus lepræ plentifully in all nodules and diffuse swellings of the tuberculated cases and in similar lesions of the mucous membrane of the mouth, throat, nose, rectum, and large intestine, and in the discharges from the ulcerated lesions. He recognizes a diarrhœa arising from the leprous ulceration of the bowels closely simulating a true dysentery, and thinks that the deaths usually ascribed to intercurrent pneumonia, tubercular phthisis, and dysentery should be more correctly ascribed to breaking down of leprous infiltrations of the lungs and bowels. He failed to find the bacilli in the early bright red patches of vaso-motor congestion due to nerve lesions, in the anæsthetic patches of the so called "anæsthetic cases," and in the chronic sores of necrotic parts of skin tissue and bone, but they were present in the nerves supplying the mutilated parts. There were none in the urine and none in the blood, nor could he discover by culture or otherwise the existence of any spores in the latter fluid. All attempts to obtain an independent and pure growth of the bacillus lepræ failed, nor were inoculations of animals of various ages in different parts of the body succeeded by a general infection. Arning inoculated a condemned criminal, but fourteen months later no definite results had followed, though a few bacilli could still be detected in the scar. Lastly, he demonstrated a vitality persisting over several months of the bacillus lepræ in putrefying tissues. On the clinical side, researches in electro diagnosis convinced him that the anæsthesia and paralysis are due to leprous disease of peripheral nerves, but he does not regard the muscular crippling as so characteristic of the disease as the bone affections. Coming to therapeutics, we notice that Arning administered iodide of potassium without any good effect, also hyposulphite of soda, creasote, carbolic acid, and arsenious acid; and with some good effect salicylic acid and hypodermic injections of corrosive sublimate. He observed the efficiency of electrical treatment in anæsthetic cases, and insists on the value of salicylic acid in a 10 per cent. paste or ointment or solution in oleic acid, and also of pyrogallic acid in a 10 per cent. ointment or strong solution in traumaticine. Arning declares that, for one reason or another, he found it impossible to obtain from questioning the natives reliable statistics on which to base proofs for the hereditary or congenital transmission of leprosy; but we note from other reports that amongst the cases of advanced leprosy at Molokai sterility is almost universal, and the majority of the offspring, where either one or both parents are diseased, have been still-born or have died within a short period after birth, and of those who have survived many have not yet developed leprosy. No congenital cases have been observed, but Arning saw two well-marked lepers aged respectively 3½ and 4 years. Dr. Mouritz points out that, whilst it is perfectly true that healthy people may live with tuberculated lepers for years without contracting the disease, many on the other hand do not escape, and he especially refers to the remarkable percentage of the non-leprous assistants, or kokuas, on the settlement who contract the disease. Of 178 kokuas, 17 developed leprosy between February 1885 and 1886.—*Lancet*, Dec. 4, 1886.

SARCOMA AND CARCINOMA OF THE BREAST.—In a lecture on this subject TILLAUX gives the following as the differential diagnosis between these affections:

The course of sarcoma is much more slow than that of carcinoma, and may extend over twenty-five years.

Confirmed sarcoma is uneven and rough, and the indentations are larger than those of carcinoma. Sarcoma is not adherent to the thorax, while carci-

noma is. Sarcoma may attain an enormous size—as much as 12 or 15 pounds.

In carcinoma the skin rapidly becomes adherent (orange skin); adhesion is late in sarcoma.

There is retraction of the skin in carcinoma (*peau capitonnée*); in sarcoma the skin is distended.

The skin in sarcoma is glistening, shiny and purplish; in carcinoma there are white and lactescent lines.

In carcinoma the nipple is markedly retracted; in sarcoma it stands out so that its form is easily made out by running the hand over the skin.

Both diseases tend to ulceration: in carcinoma the skin melts away; the edges of the ulcer are hard and continuous with the wound. In sarcoma, on the contrary, it recedes from the distension exerted on the inner face by the sarcomatous nodules; the borders are thin, soft and free. The ulceration of carcinoma may be compared to that of hard chancre, and that of sarcoma to that of chancroid.

In carcinoma the consistence is firm, and often hard and sensibly uniform. In sarcoma it is less firm; and there may be soft spots due to cysts.

Carcinoma fuses rapidly with the mammary gland; sarcoma always remains distinct.

Carcinoma quickly adheres to the subjacent tissues, particularly to the pectoralis major muscle; sarcoma glides over the subjacent tissues almost to the end of the disease.

The lymphatic system is invaded almost at the beginning of carcinoma; Sarcoma almost never attacks the lymphatics.

Carcinoma returns much more fatally than sarcoma; it returns at a distance from the original seat; sarcoma returns in the same place.

In carcinoma cachexia is rapid; sarcoma almost always remains localized.

Carcinoma is painful; sarcoma is indolent.

In operating in either case cut around the tumor into sound tissue, and try to obtain immediate union. *Gazette de Gynécologie*, October 15, 1886.

Urea and its Relation to Certain Morbid Conditions.—The question whether urea is furnished equally by all the albuminous constituents of the body, or whether it only represents the decomposition of one particular tissue or organ, has long been a puzzle to physiologists. The exclusive view, however, which regarded urea as derived only from one source, such as from the excess of nitrogenous food taken into the system but not employed, or from disintegration of muscular tissue, or from nitrogenous metabolism taking place in the liver, have given place to wider ones, and most physiologists are now disposed to admit that the sum total of urea eliminated in the twenty-four hours is derived from many sources. Such a belief would enable us to account for many anomalous circumstances attending on urea excretion in disease. Among the many possible sources of urea formation, Dr. Noel Paton (*Journal of Anatomy and Physiology*), has recently drawn attention to the destruction of blood-corpuscles in the liver, under the agency of certain hæmolytic agents, as leading to the increased discharge of urea and urinary pigment. Indeed, these researches have led Dr. Locke, in the *Practitioner* of September, 1886, to explain the diuretic action of mercury as exhibted by the action of the preparation known as "Guy's" pill. Dr. Oliver, of Newcastle-on-Tyne, has recently considered the subject from its clinical side, and has arrived at she same conclusion that Dr. Noel Paton has from the experimental—viz., that the destruction of blood-corpuscles forms an important source of urea; and he has shown that in diseased conditions in which chronic anæmia was present the daily discharge of urea was small, but that where the anæmia was quickly progressive the disappearance of blood-cells was always followed by a marked rise in the daily discharge of urea. Also in a paper on "Functional Albuminuria" communicated to the *Lancet*, Oct. 23, 1886, Dr. Ralfe observes that the albuminous element of the blood-corpuscles brought to the liver under ordinary circumstances, no doubt undergoes transformation into urea; but that when the destruction is considerable, and the process takes place suddenly, probably, whilst there is a decided increase in the formation of urea, a large proportion of this effete albumen is at once got rid of by the kidneys, giving rise to what is known as functional albuminuria. In a more severe form, however, the number of blood-corpuscles destroyed is so great that the conversion of all the effete hæmoglobin into bilirubin cannot be effected, so that a portion of the undestroyed hæmoglobin appears in the urine. In this manner Dr. Ralfe explains the relationship that exists between certain forms of albuminuria and hæmoglobinuria, and the increase of urea elimination that occurs in them. As we have already stated, the belief in the multiple sources of urea enables us to explain many anomalous circumstances attending urea excretion in disease. Thus, for instance, in phthisis with rapid wasting of tissue we should naturally expect a considerable increase of urea elimination if urea were solely derived from tissue metabolism, but no such increase can be definitely established, even when high temperature exists; and Dr. Oliver has shown, from the observation of numerous cases, that when the ureal excretion in phthisis is augmented it is always accompanied by distinct evidence of the increase of the anæmia.—*Lancet*, Dec. 4, 1886.

Reducing Dislocations of the Fingers.—Dr. J. W. Macfarlane, of Philadelphia, says: While demonstrating to a class on minor surgery the appliances used to reduce dislocations of the fingers, some difficulty was experienced in keeping Levis's instrument in position, even with a wet bandage applied to the part. Having of late been obliged to wear some of the gum finger-stalls of the shops, to avoid poisoning in a cut, and recognizing how they adhered when once in position, the idea suggested itself that one of these would be an excellent covering for the finger, over which Levis's instrument or a clove-hitch could be secured if desired.

A close fitting gum finger-stall was then applied, and, upon grasping with the right hand the finger so covered, we found that we had such a power and perfect control that further appliances were unneces-

sary—slipping being out of the question with a finger so covered, especially if the operator's hand is warm.

This simple suggestion may, perhaps, not have the merit of originality, although I have never come across it before; but it seems to me that much more accurate and judicious traction can be made when the dislocated finger is in the firm grasp of the fingers of the right hand, while the thumb of the right and the whole of the left hand are free to manipulate with, than in the customary method of procedure. Or, if desired, the gum finger-stall can be used as a fixation-point for Levis's instrument or the application of a clove-hitch.—*Philadelphia Medical Times*, Jan. 8, 1886.

TREATMENT OF CONSTIPATION WITH UTERINE DISEASE.—The *Gazette de Gynécologie*, of Oct. 15, 1886, gives the following as useful formulæ for the treatment of constipation associated with uterine disease:

In cases of intestinal paresis, with faulty secretion of the intestinal mucosa:

Extract of physostigma.....	
Extract of belladonna.....	
Extract of nux vomica.....aa	30 centig.

Make 12 pills, one to be taken on rising from bed.

In cases of hæmorrhoids the constipation may be advantageously treated by administering 10 to 30 grm. of the following:

Sulphur, washed and sublimed.....	50 grm.
Pulverized senna.....	20 "
Essence of citron.....	0.30 centig.
Simple Syrup.....	Q.S.

M. Huchard frequently uses the following:

English magnesia.....	25 grm.
Cream of tartar.....	13 "
Bicarb. soda.....	2 "
Oleo-saccharate of anise.....	1 "

Make 40 powders. One at the beginning of each meal.

Podophyllin.....	
Extract of hyoscyamus.....	
Medicinal soap.....aa	30 centig.

Make 10 pills. One or two at bed time.

Tincture of rhubarb.....	10 grm.
Tincture of nux vomica.....	6 grm.
Tincture of badian (Illicium anisatum)..	4 grm.

Ten drops in a little water 5 or 10 minutes before meals.

Cascara sagrada may be used either in the form of the powder or the tincture. Should it cause colic it may be administered by the following formula:

Powder of cascara.....	0.25 centig.
Extract of belladonna.....	0.01 "
Powder of lycopodium.....	0.10 "

In any case treatment should be continued for several weeks, or until the desired result is obtained.

HYDRASTIS CANADENSIS.—DR. WOLTERING, of Münster, confirms, in a paper published in the *Allgemeine Medicinische Central Zeitung*, No. 47, 1886, the favorable results obtained with hydrastis canadensis by Fellner and other therapeutists of note.

The styptic virtues of the drug, especially in uterine fibromyomata, are very pronounced. Thus, Woltering saw cessation of the hæmorrhages in three cases of fibromyoma with a uterus-length of 9 and 8 ctm. In one of the cases the uterus-length had at the end of one year decreased 2 ctm. True, besides the drug, the patient had had the benefit of long-continued self-tamponage and warm washes. The remedy was ordered in pill form on account of its unpleasant taste. Ten grammes of the fluid extract can conveniently be evaporated down to about three grammes of a dry extract, furnishing an excellent pill mass. Woltering orders usually as follows:

℞ Extr. hydras. canad. sicci.....	6.00.
(To be prepared from fluid extr.....	20.00).
Extr. secal. corn.,	
Ferri. redacti,.....aa	3.00. M.

F. fil., No. 120.

S.—Two to 5 pills every three to four hours.

Of course morphine, aloes, or any other indicated remedy could be incorporated with this styptic. The above pills are taken readily and well borne, especially when taken during or after the meal. Woltering claims that neither wine, aromatics, nor liquorice cover the taste of hydrastis canadensis sufficiently.

In simple hæmorrhagic endometritis the remedy renders also excellent service. In profuse bleeding from the lungs and stomach, however, a teaspoonful of oil of turpentine appears to be preferable.—*Therapeutic Gazette*, December 15, 1886.

LANOLIN MERCURIAL OINTMENT.—DR. BERNARD BRANDIS, of Aachen, in his work, "Principles of the Treatment of Syphilis," writes as follows: "I must also mention the mercurial ointment brought forward by Professor O. Liebreich, of which lanolin forms the basis. It is thus prepared: 100 parts of mercury, 25 of lanolin, and 5 of (grey) mercury-ointment are rubbed together thoroughly till all the mercury disappears, which very quickly happens, and then mixed with 50 parts of mutton-suet, to which, in the melted condition, 175 parts of lanolin have been previously added. An elegant and smooth preparation results, without any disagreeable odor, and the trials of it here mentioned speak most emphatically in its favor. Those who use it upon patients boast of the ease with which it is "rubbed dry," and we may presume that the mercury is rapidly taken up by the skin."—*London Medical Record*, Nov. 15, 1886.

RUPTURE OF BLADDER CLOSED BY SUTURE.—DR. GARRÈ reports the case of a young man whose bladder was ruptured. Petarseris colporynteur was inserted into the rectum and a median longitudinal incision made over the pubes. The peritoneum was uninjured, but there was a vertical tear 2–3 cm. long in the anterior vesical wall. Its edges were stitched to those of the external wound, thus forming a urinary fistula, which was healed in five weeks.

Rupture of the bladder with fracture of the pelvis, says Garrè, can only occur when the abdomen is full and the parietal muscles passive. The fact that the bladder contains a considerable amount of urine shows that the rupture is in the anterior wall, for if the posterior wall be torn the urine will most probably escape from the bladder.—*Centralbl. für Chirurgie*, Nov. 7, 1886.

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THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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OBSTACLES TO THE FORMATION OF PERMANENT COUNTY MEDICAL SOCIETIES.

In THE JOURNAL of last week, we called attention to the necessity for more complete and universal organization of the profession, in all its departments, into County or small District Societies, as the basis of efficient and truly representative State and National organizations. It was further stated that we have already such societies in nearly every county of some States, in a majority of others, and in only a few of the remainder; but that in all those existing, there is need of having the active membership embrace more nearly all the regular members of the profession within their limits, and still more need for the prompt formation of new societies in all the counties where none now exist. Experience has shown the existence of three chief obstacles in the way of the complete voluntary organization of the profession in a country embracing so vast a territory as ours. The first is the lack of appreciation of the advantages to be derived from such organization, on the part of a large class of practitioners. Without due consideration they let the comparatively trifling expense and time required for attending a County Medical Society, once or twice a year, deter them from making any movement in the matter. This class, though numerous, only require to have the real advantages of active membership in such medical associations fairly brought to their attention, to secure their coöperation. The members of every learned profession need some method by which its working members are, at stated intervals, brought in contact with each other and more or less before the public. This is secured for the clerical profession by the stated meetings of their conferences, synods, conventions, etc., and their weekly ministrations before the public. The same end is obtained substantially for the members of the legal profession by their frequent contact and open intellectual encounters at the bar of the several courts. But, for the great mass of the members of the medical profession, the local organized and actively sustained medical society affords the only opportunity to meet one another on common ground, each contributing something to the common stock, and each mentally imbibing something of value to himself and his patients, while the emulation or ambition for closer study and higher attainments, is more or less excited in all. To the younger members of the profession especially, the opportunities of active society work are of inestimable value. He who embraces them with a fair degree of diligence rarely fails to advance in his attainments and reputation, while he who neglects them, soon loses his habits of study, early lapses into a mere routine practice and is seldom known beyond the limited circle of his patients.

The second obstacle consists in attempts to make the machinery of these organizations too complicated and therefore difficult of execution. Many a social organization has come to an early death through vain attempts to enforce the details of its elaborate and ingenious system of rules and regulations. The more simple and brief the constitution and by-laws of a local medical society can be made, having for their paramount object the mutual improvement of the membership, the more efficient and durable will they prove to be.

The third obstacle in the way of effecting and maintaining a general and harmonious organization of the profession is difficult to define, and still more difficult to remove. It seems to have its origin in the undue development of the selfish tendencies of the human mind, and may generally be recognized in one of the three following forms: It has not required fifty years of personal observation to find in every populous community one or more medical men who make large pretensions to education and professional skill, who are prominent in social clubs and places of amusement, but when asked to join the local or county medical society, promptly tell you to "go to the dogs with your medical society. Do you think I want to go there and listen to an essay from that young upstart Dr. C., who has not had half a dozen patients since he left college, or to hear old granny D. relate a case of hysterics?" This may be styled the *pompous* form. Still more easy is it to find members of the profession fairly well educated and

gentlemanly in their deportment, but whose ready answer to all solicitations for them to sustain any general organization of the profession of a county or State, is: "Oh! I do no general practice—attend only to ophthalmological or gynecological cases, and cannot possibly find time to attend any medical societies except those devoted to my own specialty." This may be called the form of *exclusiveness*, manifested by a large class who never lack time to attend to every paying case sent to them by the general practitioner, but who never think of devoting an hour to the interests of the profession as a whole; or if they do occasionally come in to a general meeting, it is sure to be improved in generously instructing the general practitioners how most readily to diagnosticate such cases of disease as should be sent to the *specialist* for treatment. In most of our large cities may be found a small group of most influential and for the most part really eminent men, some of whom occupy positions on the staffs of public hospitals or in the faculties of medical colleges, and others are earnestly engaged prosecuting scientific or literary work. As a rule, the members of this class give no attention whatever to the city or county organizations of the profession, and only at long intervals to those of the State or of the Nation. More than any other equal number of members of the profession are they capable of giving efficient support and scientific character to the medical organizations of all grades—County, State and National; yet, by their almost total neglect, they strongly influence many others to follow their example. If you solicit them for papers and personal attendance, the almost uniform reply is, that they either have no time, or they are so much worn out by their labors they must make a trip to the mountains or the sea-side, or more likely across the Atlantic, to restore their energies, and very likely look in upon some medical society meeting on the other side. The latter step has, indeed, been so frequent with some during the last two or three decades that their writings show them to be more familiar with the society work and medical literature of some of the countries of Europe than they are of their own.

Widely different as are the three groups we have just described, they all agree in practically ignoring all obligation to personally sacrifice either time or thought in establishing and maintaining such local, State and National Medical Associations as are necessary to advance the educational, scientific and practical interests of the whole profession.

ABSCESS OF THE PANCREAS.

If there be one well established principle of modern surgery it is that suppurating cavities must be treated by incision and drainage, wherever this cavity may be located. The great strides made in the surgery of suppuration of internal organs warrants us in saying that at no distant day abscesses of the pancreas will be treated on the same principles as abscesses elsewhere. "Asepsis and effective drainage," says Dr. Senn, in the valuable monograph to which we called attention in the last issue but one of THE JOURNAL, "are the two cardinal points upon which we have learned to depend in the treatment of abscesses in important organs or cavities. If we can secure and maintain these two essential conditions, we can attack with immunity and a fair hope of success, any abscess wherever it may be located, and whatever its immediate surroundings may be." As the case now stands surgical literature shows no case in which abscess of the pancreas has been treated surgically. One reason of this may be its rare occurrence; and another that there are many difficulties in the way of recognizing the condition. The difficulties will, however, be removed by improved methods of examination, and greater skill in operating.

In looking at the pathology of abscesses of the pancreas we, of course, must remember that suppuration here, as elsewhere, is only one of the terminations of inflammation, and that the abscess, like the inflammation, may occur primarily in the pancreatic gland itself, or it may begin in the para- or peripancreatic tissue. When endo pancreatic, or in the gland, it "may be bounded and circumscribed by the proper investment of the gland; if, on the other hand, it commences primarily outside the gland it appears as a diffuse abscess, which extends to the pancreas by contiguity; in other words, we speak of the abscess as a suppurative pancreatitis, or a suppurative peri- or para-pancreatitis."

As there now seems to be no doubt as to the causative relation between pus microbes and suppuration, it must be taken for granted that suppurative pancreatitis, of whatever kind, is caused by the presence of these microbes in the tissues. The suppuration always begins in the interstitial tissue, either within the gland or in the connective tissue around it. Peri-pancreatic suppuration usually begins in the adjacent lymphatics; the pus surrounds the lymph glands or forms a small abscess. These peri-lymphatic abscesses are sometimes met with near the pancreas in pyæmia. The abscess may begin on the outer surface of the gland, and the pus separate the

gland from its attachments. Gendrin records a case in which it was lying loose in the abdominal cavity. In some cases the pus burrows in the region of the mesocolon and the retroperitoneal space, and may thence find its way into the peritoneal cavity or the alimentary canal. Again, a calculus in the pancreatic duct may be the indirect cause of an abscess; or one may originate in a preëxisting cyst, as in a case described by Kilgour. "As primary, idiopathic, uncomplicated, purulent inflammation of the pancreas is an exceedingly rare affection, it is of great practical importance in the surgical treatment of such cases to determine, if possible, the predisposing cause or causes, and to remove them, or render them inert at the time of the operation."

There are not always characteristic or positive symptoms of the presence of pus within the pancreas or in its immediate vicinity; in fact, the symptoms always point to the stomach or liver as the seat of disease. Nausea, vomiting of a clear greenish or viscid fluid, thirst, anorexia, constipation, progressive emaciation, and distension of the epigastrium are the more prominent and constant symptoms. In the recorded cases the patients as a rule, were very anæmic, and presented a sallow, cachectic appearance. In a number of cases ascites and œdema of the lower extremities were present; and in some cases there was biliary retention from extension of the inflammatory process to the bile-duct, or from stenosis of the bile-duct from compression. Fever is neither a conspicuous or a constant symptom of the condition. If the abscess be large palpation and deep percussion will show a tumor in the epigastric region. Inflammation of the stomach will often serve a useful purpose in the differential diagnosis of tumors in the epigastric region; and manual exploration of the rectum may give important or decisive information. Most of the recorded cases were in persons more than 40 years of age, and often of persons of intemperate habits. "In all cases where a tumor can be felt in the epigastric region, and a probable diagnosis can be made regarding its benign character, an exploratory laparotomy should be resorted to for the purpose of making an accurate anatomical diagnosis." This is important from a prognostic point of view, as the prognosis in abscess of the pancreas is always unfavorable. Progressive emaciation and inanition, or septic absorption, or secondary lesions in adjacent organs are usually sufficient to cause death. In cases of acute diffuse pancreatic abscess death may take place in a few days. A very great danger of these abscesses is the number of important veins in the immediate vicinity; these may become involved by extension of the suppurative process, leading to suppurative thrombophlebitis. The most favorable spontaneous termination of these cases is perforation of the abscess into the stomach or intestinal tract; and in one case this has resulted in cure. Perforation into the peritoneal cavity would of course hasten death by setting up a rapidly fatal septic peritonitis.

The treatment of pelvic and abdominal abscesses has been, and is now, so successful that the hope is justified that before very long the same treatment, and possibly the same success, will be extended to and gained in abscesses of the pancreas. It must be admitted, however, that there are greater difficulties in the way of operating in this region than in other portions of the abdominal cavity. "Multiple abscesses, disseminated throughout the entire organ, and especially its head, are not amenable to successful surgical treatment. Circumscribed endopancreatic abscess in the peripheral portion of the body or tail of the pancreas should be treated by partial excision of the pancreas in all cases where the isolation of that portion of the organ can be accomplished without inflicting serous injury to adjacent important organs. When extirpation is impossible, as when the abscess is located in the head of the organ, it must be treated by incision and drainage. This is accomplished in the same manner as in the treatment of a pancreatic cyst. In some instances the access is rendered difficult by distension of the stomach, the dilated organ overlapping the pancreas. In such cases the stomach must be pushed upward, and subsequent distension guarded against by ordering an absolute diet until the external fistula has been established. The external incision must, in all cases correspond to the most prominent part of the swelling, as it is of the greatest importance to incise the abscess at a point where the distance between the surface of the abscess and abdominal wall is the shortest. Incision of the great omentum will be required in all cases. In making an external fistula it is essential to protect the muscular and connective tissues of the external incision against contact with pus by lining the margins of the wound with the parietal peritoneum before the serous covering of the anterior wall of the abscess is stitched to the margins of the wound." A great difficulty in this operation will be the approximation of the peritoneal surface of the abscess with the margins of the wound; a difficulty which increases in proportion to the prominence of the swelling. The external incision should be large, as the margins of the wound can then be turned in, which facilitates suturing of

the anterior wall of the abscess to the margins of the wound. There is but little danger of puncturing the abscess-cavity with the needle, as the anterior wall of the abscess is generally covered by peritoneum and is of considerable thickness. Evacuation of the abscess by aspiration, before the operation, will cause recession of the abscess wall, and thus render approximation difficult; but it may be done if the swelling is so prominent as to render this a secondary matter. The sutures of the peritoneal surfaces should be of silk, should be placed close together, and grasp the tissues so that tearing out will be impossible; for the object of the sutures is to prevent escape of pus into the peritoneal cavity, and to secure permanent adhesions of the abscess wall to the margins of the wound. Incision and drainage should follow immediately upon the suturing.

"The remaining steps of the operation will depend upon circumstances. If the abscess is endopancreatic or peripancreatic, simple incision, drainage, and disinfection will answer all indications. If, however, the purulent cavity is located behind the peritoneum and occupies the connective tissue space behind the pancreas, it would appear rational to drain the abscess posteriorly through one of the lumbar regions above the kidney by pushing a long closed forceps in a proper direction through the posterior and lateral wall of the abscess until its point can be felt under the skin externally. A small cut in the skin over its point will enable the operator to push the instrument clear through, and, by dilating its blades, widen the canal sufficiently to permit the insertion of a large drainage tube. In this manner the most desirable method of drainage—through drainage—could be established, which would render subsequent disinfection and evacuation of the abscess a comparatively easy task. In cases where an anterior pancreatic fistula cannot be established on account of the distance between the abscess and the anterior abdominal wall, we might resort to lumbar drainage and closure of the incision in the anterior wall of the abscess by carefully inverting and approximating the peritoneum over the wound with fine silk sutures. The abscess found and located by abdominal section should be removed by partial extirpation of the pancreas when it is endopancreatic and located near the splenic end of the pancreas. When extirpation is impossible, or when it is located in the head or on the anterior surface of the pancreas, it should be treated by the formation of an anterior abnormal fistula; when located behind the pancreas, by through drainage, or lumbar drainage performed through the abdominal cavity."

"THE CHICAGO CINCHONA COMPANY; OFFICE, PALMER HOUSE."

We have received from a physician in a neighboring State a printed circular, marked by its author "private and confidential," setting forth the formation of a company by the above title, and with a capital stock of $500,000, for the purpose of manufacturing and selling "D'Unger's Cinchona Cure for Drunkenness." The company claims to have purchased the formula and all details of its preparation from Dr. D'Unger; and while setting forth in the usual style its virtues as "a certain cure for drunkenness and the morphine habit," this "private" circular shows the real nature of the speculation in the following paragraph:

"The capital of the company has been fixed at $500,000, the price of each share being $20. Of this sum, $250,000 has been placed by the former owner of the formula in the treasury, to be *allotted* to *such physicians* as may desire five or ten shares of it at *twenty-five* cents *on the dollar*." This offer is made to physicians *only*, and is rendered more tempting by the strong assurance that after the remedy is fairly introduced to the profession, it will yield "annual dividends of at least 25 per cent. to the stockholders." The circular is signed by E. S. S. Kemp, President, and Henry Plowman, Jr., Secretary.

As the so-called "D'Unger's Cinchona Cure for Drunkenness" has been advertised (and sold by its "former owner") in the daily papers of this and other cities for five or ten years past, until its worthlessness is as well known as is that of all the other advertised *cures* for *drunkenness*, etc., it is hardly necessary to caution the most credulous member of the profession against wasting even a postage-stamp on inquiries concerning it.

SECTION OF OBSTETRICS AND DISEASES OF WOMEN, OF THE AMERICAN MEDICAL ASSOCIATION.—In THE JOURNAL of last week we published a preliminary programme of work for this Section as furnished by the President and Secretary of the Section, for the coming meeting in June. The number and character of the parties named in the list affords a guarantee of an excellent meeting. We now are requested by the Secretary to add to his list the name of another eminent writer, Dr. H. F. Campbell, of Augusta, Georgia. Which Section will follow next with an equally good showing?

THE NATIONAL CODE OF MEDICAL ETHICS.—Our cheap Reprint edition of the Code of Ethics of the

American Medical Association is ready. Physicians or others wanting single copies should send a *two* cent postage stamp to pay the cost of the reprint and a *one* cent stamp to pay the postage. One hundred copies can be sent for $2.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, November 24, 1886.

The President, C. H. A. Kleinschmidt, M.D., in the Chair.

H. M. Cutts, M.D., Secretary.

Dr. D. S. Lamb presented for Dr. J. Taber Johnson the specimens and read the histories of

THREE CASES OF OVARIAN DISEASE.

Case 1.—On the 18th of Oct., 1886, I saw Miss L., at the request of Dr. B. B. Adams of this city. She was unmarried, age 31, and had been well up to three months ago, except attacks of typhoid fever and jaundice, which she had four years ago. Her sisters first noticed her change of form which progressed with unusual rapidity, until she reached the size of a woman eight or nine months pregnant. Her condition attracted the attention of friends and neighbors, and though quite able to do so, she reluctantly appeared in public. Her disease so preyed upon her mind that she lost flesh rapidly and was fast becoming an invalid. Upon my advice she took a private room in the Providence Hospital, and on the 23d of October, 1886, I made a two inch incision and removed what proved to be a parovarian cyst, weighing twelve pounds. She has up to this moment, had no unfavorable symptoms. She left the hospital on the 20th day, perfectly well.

Case 2.—Mrs. C., white, age 24, married for three years; has been subject to most dreadful attacks of menstrual or ovaro-epilepsy, for the past ten years. She was sent to me by Dr. J. W. Bayne. Mrs. C. had been under the care of at least twelve different physicians, including Dr. Hammond, of New York. She had been told repeatedly by Dr. Hammond and others, that the cause of her trouble was ovarian, and believed to be incurable, except by removal of those organs. During these ten years the patient had worn out the endurance of as many doctors who had passed her on to the next, and of several hospitals, which had discharged her, after exhausting their nurses and drugs to no purpose. She had tired out relations, friends and neighbors, in watching and holding her. While her periods were less than normal and irregular, the menstrual molimen occurred with painful regularity, and before it, during and afterwards, she had the most active and distressing clonic spasms. She would, on some occasions, remain unconscious for half a day or more at a time, except when in an attack, when she would require the strength of a number of women to hold her, including those in the house and what neighbors would come in, until her husband could be sent for. She has been much worse since marriage than before. The patient was unable to do much, if any useful work about the house. She complained of almost constant pain in the pelvic region; and was losing ground mentally as well as physically. When I was asked by Dr. Bayne to see her, I was informed of her previous history and present condition. A vaginal examination caused much pain and brought on convulsions. I did not then feel her ovaries. Though requested by the attending physician, the patient and her family, to remove the uterine appendages, her case did not seem to me, at that time, to be one which held out a very strong promise of cure by this operation, and not wishing to have a failure, I declined to do it. Two months later their importunities were so great, and also their anxiety to take the risk of a cure, as well as the risk to life, which *were fully explained to them all.* I made another examination under ether. I found the ovaries atrophied and adherent to the tubes and surrounding structures. Believing that cause enough existed for the production of her symptoms, I agreed to operate. I had the patient take a private room in the Providence Hospital, and on the 27th of October I removed her uterine appendages. It is now five weeks since the operation, and barring her use of opium, which is an old habit, her present condition is all that one could expect or wish. I anticipate that she may have slight spasms for a while, at the time when her periods are due, but hope they will grow less and less severe until they finally disappear. Her change of life, produced by the operation, may not be any more sudden, than when it occurrs in the usual way. If at the end of two years she is free from her old troubles, I shall feel that the operation is a success, and was properly done. If she is no better I shall regret it. The evidence in recent medical literature is not conclusive on this question. Even Sir Spencer Wells in the recent symposium, in the *American Journal of Medical Sciences*, does not decide against it. He says he thinks every thing else should be done first, and well-done and continued for several years, and that all the risks of the operation should be explained to the patients and their friends; and so do I. But what shall we do with those patients who resist all treatment, marriage included, for years, and are growing worse? This operation must continue to have a limited field of usefulness in nervous diseases where all other treatment has failed. Battey in his part of the recent symposium above referred to, produces unimpeachable evidence of the beneficial and lasting effects of the removal of the uterine appendages in both nervous and mental diseases. I join those who cry out against the abuse of this operation, but I am in favor of it after other means have failed, rather than allow this class of patients to die or to repeatedly go over the same dreary old ground without benefit.

Case 3.—Mrs. W., white, age 49, married, the mother of five children; passed her menopause seven

years ago, she was without her periods for five years. During the past two years she has had some irregular bloody discharges, which were supposed to be a return of her menses. Being a patient of Dr. B. B. Adams, she sought his advice and treatment. Some of her peculiar symptoms he attributed to her rather irregular change of life. As her abdomen enlarged the question of pregnancy arose, and finally when she had clots of blood discharged, and especially when it was accompanied by a bad odor, it was supposed that she was carrying a dead fœtus, and that there had been an hydatidiform degeneration of the membranes. She was supposed at one time to be in labor, and these symptoms continued for about ten days. I was asked to see her and to assist in delivering her. Sponge tents had been introduced, and efforts had been made to rupture the bag of waters. I found her in an acute peritonitis. Her abdomen was so tympanitic, tender and distended, that an accurate diagnosis was impossible. I decided two points, however: 1. That the uterus was empty and not enlarged; 2, that she had a tumor of some kind. She grew rapidly worse for several days, until one night I was telephoned for to see her die. As she had a septic discharge, and as I had other abdominal cases on hand, I declined; but requested them to arrange for a post mortem, which they did. She had a pulse of 160, cold clammy skin, and a subnormal temperature. She rallied from this condition, and in ten days was sitting up and anxious for an operation. Dr. Busey was invited to see her at my request. He was uncertain as to whether the tumor was ovarian or cancerous, but agreed with me as to its presence, and that the uterus was empty. We decided to make an exploratory incision and remove the tumor if it appeared feasible. She at once arranged for a private room in the Providence Hospital. On the 10th inst., I opened the abdomen in the presence of Drs. Busey, B. B. Adams, Reyburn, Cutts, Cuthbert and others. The abdominal wall was at least 2.5 inches thick in fat. When the tumor was exposed it had the dark appearance of an ovarian tumor, with a twisted pedicle. Some dark extravasated blood escaped. The recent and still uncured peritonitis had caused the tumor to be everywhere adherent. These adhesions were easily broken down and I decided to proceed. After separating the tumor as much as I could I tapped it and drew off half a bucket full of what appeared to be dark red blood. It was difficult to turn the tumor out of the abdomen as it was very friable and tore when much traction was made upon it. I finally succeeded, and reaching the pedicle, transfixed and ligated it, cut away the tumor, the solid part of which was estimated to weigh at least five pounds. The bleeding from the torn surfaces soon ceased, and I was not compelled to wash out the abdominal cavity as at one time I thought I should have to do. After crowding several large sponges into the cavity, the last of them coming out clean and dry, I concluded to close the wound and put in a glass drainage tube. The operation lasted just an hour; fully a third of this time was consumed in putting in the sutures and applying the dressings. The unusual fatness of the abdominal wall was a source of difficulty and delay. I think all the gentlemen present expected the patient to die, myself among the rest, on account of the nature of the tumor and the extensive adhesions. The tumor was thought from its appearance to be cancerous. The patient has made an uninterrupted recovery; her only drawback being a troublesome cough, produced by the ether, and from abscesses along the track of the sutures. It is now two weeks since the operation and the patient is feeling perfectly well, has a splendid appetite and is anxious to sit up and go home.

DR. P. J. MURPHY presented the following history, and a bottle of thick, pinkisk-white fluid removed by laparotomy from the patient, of a case of

CHYLOUS ASCITES.

Maggie M., æt. 19, white, single, nativity D. C. Admitted to Columbia Hospital for Women, Nov. 7, 1886.

History.—Puberty at 16 years. Menses are regular, painful, scanty, light in color, and last three days. Father died of phthisis pulmonalis five years ago; and a sister died of the same disease one year later. Two children died of diphtheria and one of heart trouble from rheumatism. Family history otherwise healthy. Last summer she was a chambermaid at a hotel in the Catskills, and had to work very hard. While there she went frequently to balls, sometimes walking as far as ten miles, and being perfectly exhausted next day. Now suffers from "swelling" of the abdomen, which began about three weeks ago after an attack of "chills." When the swelling began she had a severe pain in the right inguinal region, which lasted about a week. Since then has had no pain. Bowels constipated. Appetite poor. Has dyspepsia. Has never been strong. Is now pale, emaciated and very nervous. Last menses Nov. 1st to 4th.

Examination.—An exploratory incision was made in median line of abdomen and a creamy colored fluid gushed out, 9 pints of which were saved and fully twice as much lost. Bi-manual examination (one hand inserted through the wound and the other per vaginam), showed the uterus and appendages to be normal in size and position. There was no sac present, but the fluid was clearly loose in the abdominal cavity. There was no glandular enlargement discovered or other evidence of local disturbance. A glass drainage tube was inserted, but there being no further discharge the tube was removed on the fourth day and the wound closed.

Examination of Fluid. — Color, fresh cream (slightly pinkish from blood). Reaction — alkaline. Specific gravity—1,023. Albumen—about 70 per cent. by bulk after heating.

Microscope.—A number of red and white blood corpuscles and a large number of irregularly outlined, globular bodies, having a diameter of 8 to 20 m. m., that are thought to be *lymph globules.* On standing the fluid separates into layers—the lowest being nearly white.

DR. S. C. BUSEY said the specimen just exhibited by Dr. Murphy was one of the most interesting he

had ever seen. He supposed the case was one of chylous ascites, and it was possible that the chyle had escaped through a puncture of some chyle vessel by this *filiaria sanguinis hominis*. Most of the distinctive characteristics of chyle were, however, not present, certainly not given, no fat was reported present in the milky fluid. (Dr. Murphy explained that the examination had been hasty and very likely much had been overlooked.) The pinkish color might be due, as Dr. Murphy says, to admixture with blood from the wound, but such a color may be derived from other sources. If the fluid be chyle it must have been discharged from some chyliferous vessel or escaped by transudation. In the latter event the quantity would have been small and would have gradually diminished instead of continually increasing, as in case of rupture of some chyle-conveying vessels. Only about thirty cases of chylous ascites have been reported. Most of the cases have occurred in Germany. America, England and China report a few cases.

There have been also a few cases of chylous hydrocele reported. The first in this country was by Dr. Mastin, of Mobile. Vidal was the first to suggest, but Mastin was the first to demonstrate, that the milky fluid found in these cases had escaped from dilated and ruptured lymph vessels. Having discovered the milky fluid previously by tapping the scrotum, he subsequently, after its refilling, cut down upon the sac and discovered the network of dilated and ruptured lymph vessels, ligated it, and the patient recovered. Mastin, Jr., had had a similar case, in which he found the same condition. It was treated in like manner, and also recovered. Other cases had been reported cured, one by the injection of iodine.

Lymph scrotum and chyluria are now believed to be due to the presence of the filiaria, but, as yet, only two or three cases of chylous ascites have been proven to be due to the puncture of this pariete. The escape of chyle into the peritoneal cavity in large quantities is due to the rupture of some large vessels, thoracic duct, lacteals or receptaculum chyli. Most frequently the rupture is found in the lacteals. Any condition which may interrupt or impede the flow of chyle into the subclavian vein will cause stasis, repletion, dilation, and may cause rupture, either of the duct, but more frequently of the receptaculum. or lacteals. Certain pulmonary and heart diseases have produced such results. The presence of cancerous, aneurismal and other tumors and other conditions, by occluding or obliterating the thoracic duct either at or about its terminus or along its continuity, have caused rupture of the duct or other large chyle-conveying vessels. Several cases have been ascribed to some violent and sudden effort, and at least one to congenital defect.

The diagnosis of chylous ascites can only be made by microscopic examination of the fluid. The accumulation of a fluid can be recognized and it can be determined whether free in the peritoneal cavity or in a cyst. Acute anormia, with great and sudden prostration, a loss of appetite and rapid diminution of the quantity of urine, associated with the rapid accumulation of a fluid in the peritoneal cavity, might suggest the presence of chyle.

Dr. Busey believed the treatment in this case was correct, but the fluid would probably reaccumulate, and the patient finally, as is usual, die of pulmonary disease. The fluid in chylous ascites is chyle, but in the cases of chylous hydrocele it was lymph transformed into a milky or chyle-like fluid in consequence of disease of the intima of the lymph vessels.

Dr. A. F. A. King suggested that Dr. Murphy obtain, if possible, a thorough history of the antecedents of the patient and of all points pertaining to her. He said that it is supposed that the filiariæ are spread by mosquitoes. These insects suck the embryos with the blood of the person. The embryos grow and burst open the mosquito and then fall into our food or drinking water. A peculiarity of the filiaria is that it cannot be found in the blood in the daytime.

Dr. Busey said that it was either Lewis or Manson who confined persons in a room filled with mosquitoes. Before their confinement careful examination proved the absence of the filiaria. Shortly after this confinement with the mosquitoes filiariæ were found in the subjects of the experiment. Manson was the first to discover the relation between the elephantiasis and the filiaria. He found in every case the fileria.

Meeting of December 8.

The President in the Chair.

The case of

CHYLOUS ASCITES

reported two weeks previously came up for continued discussion.

Dr. S. C. Busey said that he had recently seen the case and could add some points to the history. The girl had begun menstruating at 16, and the menses had always been in every way normal except that on one occasion she had "missed" one month. She had been otherwise healthy, and last summer she had been a chambermaid in a summer hotel in the mountains. She had been accustomed when off duty at night, to take long walks, go to parties at a distance, etc. It was after one of these long walks that she suddenly felt a violent pain in her abdomen on the right side. Her abdomen then began to swell, the pain still continuing. She had good appetite and ate heartily, but lost flesh, and color and strength. Since the operation by Dr. Murphy the pain has disappeared and she has regained, somewhat her weight and strength. Before the lower end of the wound, which had been a large one, had closed, there had been some oozing of a chylous fluid. He said it looked as if some chyle duct had been ruptured by violence. Dr. Nickerson, of Lowell, reports such a cause in a man upon whom he operated several times before he obtained a cure. Another case is reported by Viniwarter, in a child. The large abdomen was supposed at first to be due to a congenital cyst. Two operations cured this case. Several other cases are reported, notably one by Bessieus in a girl due to exertion in raising a child.

DR. BUSEY replied to Dr. King that he thought the cause of pain was the rupture of the duct or receptaculum chyli, and to Dr. Cook that there was no special desire on the part of patients suffering with escape of chyle for fat. If the chyle escaped only slowly through a small opening the peritoneum readily reabsorbs it, and patient suffers no very great emaciation. In cases where there has been a large and sudden escape of chyle there is much loss of weight and symptoms of collapse. The person is probably here also kept alive by reabsorption by the peritoneum. There is a case reported by Poncy which he tapped twenty-two times in six months, removing 285 litres of chyle. Here the color and smell of foods given could be recognized. Usually there is a good appetite and the food is enjoyed.

DR. KING said that he thought that the odor of some foods, as onions, could be detected in all fluids of the body.

DR. E. CARROLL MORGAN presented a specimen of

NASAL POLYPUS,

and said he thought it instructive by reason of the beauty, freshness, and unusual dimensions of the tumor.

The history of his patient, briefly stated, is as follows: John K., white, male, aged 18 years, born in Ohio, now a resident of Washington, D. C. The patient first noticed the polypus in August, 1882, in the right naris. It grew slowly, giving little trouble. In November, 1885, he was operated on by Dr. Blank, of Columbus, Ohio, who clipped off a small portion of the tumor. Patient breathed freely for about one month, when the tumor rapidly increased in size. He was much affected by cold in the head, and by changes of temperature, and the tumor often protruded as far down as the lower lip. When the cold was relieved the tumor retracted within the nose. I operated on him at 3 P.M. to-day, Nov. 24, 1886, when the tumor was just even with the anterior nasal orifice. The polypus was removed in the presence of Drs. Thos. A. Taylor and Frank Chamberlain, is of the mucous or gelatinoid variety, weighs 265 grs. (℥ivss), measures four and a half inches in length and one inch in its greatest breadth. The attachment was apparently to the posterior extremity of the lower turbinated body, and the wonder is that there was not regurgitation of the polypoid mass into the pharynx, for it was not adherent anteriorly, allowing the wire loop to be passed freely over its entire length. The operation was done with a Douglas snare and by the aid of reflected light.

The polypus was extracted through the right anterior naris. There was slight bleeding and nasal respiration was completely restored. It is, however, not certain that the entire polypoid mass has been removed, and a second operation may be required, as in other cases.

DR. J. L. ELIOT read a paper entitled

NARCEINE IN THE TREATMENT OF WHOOPING-COUGH.

(See page 92.)

DR. S. C. BUSEY asked the cause of the convulsions, as it is very important to find out the pathological conditions present in these rare cases of whooping-cough which prove fatal by convulsions. Is it a defect of the respiratory centre or thrombosis of the cerebral sinus?

DR. G. B. HARRISON said that it is frequently stated that a second attack of whooping-cough is rare. It seemed to him that a second attack was not uncommon, and he knows of several persons who had had three attacks.

DR. A. F. A. KING said he was aware that the exanthemata attacked the child in utero, but he failed to see how whooping-cough would reach it before birth. If a child presents the symptoms of pertussis on day of birth it must have had the prodromal symptoms in the womb. As children born after having had small-pox in utero are to some extent exempt from it in after life, he does not see why the same should not be true of pertussis. He mentioned a case of twin birth where only one child had small-pox, and stated that Morrison, the obstetrician, was born with small-pox pustules, though his mother did not have it at the time, but was only nursing a son with the affection.

DR. BUSEY said that he had never heard of a case of congenital whooping-cough.

DR. KING said that he did not mean to imply that the child actually coughed in utero, but if born with whooping-cough when did the catarrhal process in the lungs begin?

DR. J. L. ELIOT said that he did not think, at any rate, that the narceine was the cause of the convulsions, as the dose was small and the effects had passed off several days before.

DR. S. S. ADAMS questioned the diagnosis made by Dr. Eliot. He said that it was extremely difficult to tell at that age what is the matter with a child. The pathognomonic symptom of pertussis is the whoop, and even that may be produced by simple laryngitis. He did not think that narceine would produce convulsions, but congestion of the kidneys following its use might. He said that there was no specific treatment for whooping-cough.

DR. BUSEY objected to the statement that pertussis could not occur without the whoop. For instance, all of several children of a family cough; all present the same phenomena except that one does not whoop. If this was an isolated case the diagnosis would be uncertain. But if whooping-cough was epidemic and the others undoubtedly had it, he thought it fair to say that the child who did not whoop had it also. Usually the cough and whoop are associated, but the latter varies in degree and intensity, and may only occur once or twice, or not at all, during the attack. He thought that there was no medicine which could stop the disease, but it could be cut short by treatment. The epidemics also vary in severity and contagiousness, and the remedies successful in one will fail in another. The season had its effect. In autumn and winter attacks were less controllable. Climate and hygienic surroundings were elements to be considered. He has seen one death preceded by convulsions, and thrombosis of the cerebral sinus was probably the cause. The case just reported may have had pneumonia or ate-

lectasis. The narceine narcotism would have helped bring about the former. Of course he does not censure Dr. Eliot for having given narceine. The child also must have been badly nourished, which condition would predispose to cerebral thrombosis.

Dr. Adams said he was still unconvinced that pertussis could be diagnosticated without the whoop.

Dr. T. E. McArdle said that the mere fact of a laryngitis or a bronchitis occurring in a child in a house with several cases of whooping-cough did not prove that the child had pertussis. For his part he knew of no way to tell the disease without the whoop.

Dr. Briscoe said that about six years ago he caught the disease from his children. His paroxysms of coughing and theirs were alike, but he whooped only once or twice during the attack.

Dr. G. W. Cook said that the whoop was only an inspiration after a violent attack of coughing, and might happen after such a paroxysm from any source.

Dr. G. B. Harrison said that he had diagnosticated endemic cases before the whoop appeared. There was a characteristic peculiarity in the paroxysm of coughs.

Dr. Adams asked how the diagnosis was made without the whoop?

Dr. King replied that there were a series of short expirations which cut off the air supply and the person gets blue in the face.

Dr. Adams said that he had seen the same in bronchitis.

Dr. Busey said that there were paroxysms of cough which increased in their intensity up to a certain point when they began their decline. They have, as Dr. Harrison says, a peculiarity of their own. If the chest be examined before the paroxysm we will hear coarse and moist râles which disappear after the fit of coughing, and this occurs in no other condition with which he is familiar.

Dr. Adams said that we can make a diagnosis in most diseases if we wait long enough, it may be at the autopsy. Bronchitis has usually been associated with his cases of whooping-cough, and the râles he has found both before and after a paroxysm.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, December 2, 1886.

The Vice-President, E. E. Montgomery, M.D., in the Chair.

W. H. H. Githens, M.D., Secretary.

(*Concluded from page 82.*)

Dr. Joseph Price read a

REPORT OF THIRTY-ONE CASES OF INTRA-ABDOMINAL OPERATIONS DONE WITHOUT ANY SELECTION IN PRIVATE HOSPITAL; BY R. STANSBURY SUTTON, OF PITTSBURGH, PA.

October 27, 1883, Mrs. B. Ovariotomy, large cyst; recovered.

November 18, 1883, Mrs. O. Ovariotomy, large cyst; recovered.

December 28, 1883, Mrs. C. Ovariotomy, large cysts, extensive adhesions, tapped frequently; recovered.

February 2, 1884, Miss T. Supra-vaginal amputation of uterus, with both ovaries and tubes; recovered.

February 20, 1884, Miss P. Supra-vaginal amputation of uterus, with both ovaries and tubes; large fibroids of uterus; recovered.

March 20, 1884, Mrs. K. Ovariotomy, left ovary large and cystic, developed under the broad ligament and roofed over by it. The ligament was opened up to get at it. On right side a fibro-cyst of the uterus, with adhesions, existed. Performed supra-vaginal amputation of the uterus with the remaining ovary and tube, and split the broad ligament of the left side; recovered.

April 22, 1884, Mrs. S. Ovariotomy, large cysts, extensive adhesions, especially to the liver, had been often tapped. Liver was burned with cautery iron over strip one inch broad by four or five inches long to stop bleeding. Incision in abdominal wall seventeen inches long; recovered.

May 12, 1884, Mrs. D. Large sarcoma of left ovary, general chronic peritonitis with ascites, tumor fed by enormous vessels. Pedicle tied and dropped as in ovariotomy. Pulmonary clot occurred on fourth day suddenly with temp. 99°; died.

May 29, 1884, Mrs. G. Ovariotomy, large cyst, adhesions; recovered.

June 24, 1884, Mrs. S. Pelvic abscess. Tait's operation (the pus was stinking); recovered.

July 12, 1884, Miss M. Removal of sub-peritoneal fibroid, anterior wall, pedicle short; recovered.

July 12, 1884, Mrs. L. Supra-vaginal amputation of uterus with 16 pound fibroid; extensive enucleation, adhesions numerous; died.

September 16, 1884, Mrs. R. (insane), removed both ovaries and tubes, cured; recovered.

September 22, 1884, Miss J. Both ovaries and tubes removed. Died of septicæmia on fifteenth day. (Consultants pronounced it typhoid fever.)

September 24, 1884, Mrs. W. Supra-vaginal amputation of uterus and both ovaries, with 15 pound fibroid, extensive enucleation, vast adhesions; tetanus; died.

December 4, 1884, Mrs. C. Supra-vaginal amputation of uterus for large fibroids; extensive intestinal and mesenteric adhesions, and in the presence of peritonisis, very bloody operation. Shock was too great; died.

December 17, 1884. Resection of small intestines at two points for cure of artificial anus and extensive adhesions of gut, fatal on seventh day from renal hæmorrhage. Five stones, one an inch long, were found in the kidneys post mortem. The points of resection were found with difficulty, the sutures were all covered. (My first and only other resection of intestine recovered and is living, three and one-half years since operation.)

March 7, 1885, Mrs. J. Ovariotomy, large cysts, extensive adhesions; had often been tapped; recovered.

April 7, 1885, Miss S. Exploratory incision; recovered.

June 10, 1885, Mrs. L. Double ovariotomy, dermoid on right side; recovered.

June 27, 1885, Miss H. Both ovaries and tubes removed; recovered.

July 30, 1885, Miss D. Ovariotomy, large cysts, extensive adhesions, came in a dying condition, had been tapped very often; died.

November 18, 1885, Mrs. B. Ovariotomy, incomplete small cyst, size of cocoanut. As it was impossible to remove the cyst on account of adhesions, it was emptied, dried out, and lining well mopped with a five per cent. carbolic solution. Recovered and cyst has not refilled.

November 19, 1885, Mrs. M. Oöphorectomy, right ovary and tube; recovered.

November 24, 1885, Mrs. W. Double ovariotomy, large cysts, bad adhesions, patient very anæmic and feeble, had been tapped often; recovered from operation, but died from peri-nephritic abscess three months afterwards.

January 9, 1886, Miss N. G. Oöphorectomy, pyosalpinx; recovered.

March 23, 1886, Mrs. R. Oöphorectomy, right ovary and tube; recovered.

April 3, 1886, Mrs. N. Oöphorectomy, both ovaries and tubes; kidneys contracted, uræmic poisoning a week after operation, coma, death.

October 1, 1886, Miss S. Oöphorectomy, right ovary and tube, chronic ovaritis and salpingitis; had to dig the ovary and tube out of a mass of adhesions; bad case; recovered.

November 20, 1886, Mrs. N. Double ovariotomy, removed large parovarian cyst and cystic ovary on left side and cystic ovary on right side; recovered.

This list of thirty-one abdominal sections are all I have made in my private hospital during the three years of its existence. I have never used spray over a wound, and only occasionally in my earlier cases I used 2½ per cent. carbolic solution over the instrument. Long ago I quit this and have used no chemical during the operations. After closing the wound I dress it with iodoform gauze. Our wounds all heal by first intention. A great many of these patients have neither health, strength, or money when they come to us. Rich or poor, all have had the same chance for life. All the provisions of cleanliness known to science and art are practiced in my institution. With our present good condition, I believe we can save 98 per cent. of ovariotomies sent within a year or eighteen months from the time the disease begins, and without having been tapped. We never lose a case if in fair condition, and if no trocar has been previously introduced into the cyst.

In this list there were thirteen ovariotomies for large cysts, and in one case a supra vaginal hysterectomy was also done. Of these thirteen cases two died, one of the two three months after operation, and the other was in the last stages of exhaustion when she was brought in on a stretcher.

Of the cases of supra-vaginal amputation of the uterus and both ovaries, there were six. In one an ovariotomy was also done for large cysts. Of these cases three recovered and three died.

The Tait operation for large pelvic abscess recovered.

The intestinal resection was not lost through the operation. The removal of the uterine appendages shows a mortality of two cases; one was due to operation, I think the other was not.

I am sure that, as we gain experience in further operative work and exercise more care in rejecting cases with bad kidneys, our results here will compare favorably with others. Thus far we have refused no patient willing to enter the list for operation, and I am sure that no operator, East or West, is likely to meet with worse cases than are contained in this list. Summary:

Ovariotomies, McDowell operations	13
Oöphorectomies, Hegar-Tait operations	8
Laparotomy for pelvic abscess, Tait operation	1
Resection of intestine	1
Removal of large solid sarcoma of ovary	1
Supra-vaginal amputation of uterus and both ovaries	6
Exploratory incision	1
Removal of sub-peritoneal fibroid of uterus	1

(One case is counted twice, first as an ovariotomy for large cysts complicated with supra-vaginal amputation for fibro-cyst of uterus; second, as a supra-vaginal amputation of uterus complicated by ovariotomy.)

In looking over my ovariotomy cases who have recovered during the last ten years, I find that eight children have been born to them. My last laparotomy (46th) for all diseases yet attacked by operation, by me, was a large parovarian cyst, with both ovaries cystic. The cyst and both ovaries were removed through a two inch incision, the dressing completed, and the woman in bed, in thirty minutes, without any haste. She has taken no drugs, not a drop of anything. Temperature on the fourth day was normal and the pulse 76. Wound completely healed. Experience with honest precautions, coupled to a possibility of earlier operations and a discontinuance of tapping, will result in as good statistics in this country as abroad.

DR. H. A. KELLY remarked that Dr. Sutton's account of his cases is very interesting, and in many particulars instructive, and better results for general work, handling all classes of cases without selection, certainly can not be found in our country. He, Dr. Kelly, called especial attention to the note by Dr. Sutton, that his ovariotomy patients have borne eight babies within the past ten years. This fact is significant as deciding a question which has been discussed in terms of vague generalization and sentimentality, "The Other Ovary."

About a year ago, when writing a paper upon ovarian cysts of large size, Dr. Kelly found facts in Sir Spencer Wells's table which determined this question for him upon a solid scientific basis. Of Sir Spencer Wells's 1000 cases, 768 recovered; and deducting from these 343 over 40 years of age, as beyond the child-bearing period, we have left 371; again deducting twenty more, which was about the number of double ovariotomies, under 40 years, recovered, we have left about 351 women survivors with one ovary and in a child-bearing condition. As an actual fact, 117, or about one-third, did bear children to the number of 228, or a fertility of about 65 per cent. to the total number of survivors. This is

then clearly the advantage of leaving one ovary in 351 women, to-wit: 228 children. Now what are the disadvantages? Obviously a return of the tumor in the other ovary, and death from the second operation,

In seven of these 351 women a second operation was necessary, and one of the seven died of a tumor, doubtfully uterine.

Here, then, is the status of "the one ovary" case. *One doubtful death* of a woman seven years after her first operation, against *two hundred and twenty-eight children born.*

Dr. Kelly could not accept the diagnosis of death from typhoid fever in a surgical case within three weeks of operation, in the absence of careful post-mortem examination. The typhoid condition is so common in all cases of peritonitis tending to a lethal end, and true typhoid fever so extraordinarily rare, that he rejected the diagnosis not subsequently confirmed. It savors too much of the many cases of women coming to my office week after week who tell me they "have never been well since their last confinement, when they had typhoid fever." Dr. Sutton, however, does not himself make this assertion.

Dr. Coffee, of Pittsburgh, drew attention to a case under his own observation in which typhoid fever of distinct character followed close upon a surgical operation.

Dr. M. Price spoke of a case in which typhoid fever followed immediately after an attack of small-pox.

Dr. Joseph Price reported a case of

HYSTERECTOMY FOR MYOMA.

The patient had applied to Dr. J. R. Haynes on account of menorrhagia, with hypogastric discomfort. Uterus about the size of a three months' gravid uterus. She became very much prostrated, and suffered from sciatica in the right leg. The tumor grew rapidly, and seven months after first seeing her the tumor was found to extend from the umbilicus to the perineum, resembling in shape and position the gravid uterus at seven months. Two inches below the umbilicus and to the left a bruit was distinctly heard. Fœtal heart-sounds could apparently be distinctly heard beating 125 per minute, but they were syncronous with the patient's pulse. The lower portion of the tumor extended into the vagina almost to the perineum, and resembled very much a fœtal head surrounded by a small quantity of fluid. The os uteri could be felt, only with the utmost difficulty, behind the centre of the os pubis.

November 19 Dr. J. Price performed abdominal section; before operation her pulse was 150 and temperature 100°. Six syringefuls of brandy were given hypodermically. The operation lasted about an hour. The patient slept well that night and improved in condition for a few hours, after which vomiting occurred, followed by great restlessness, pain, and increased frequency of pulse. Peritonitis developed and the patient died at 7 A.M., about thirty-one hours after the operation. Post-mortem examination showed nearly a pint of bloody serum in the peritoneal cavity.

Dr. Price remarked that in reviewing the operation he felt that, with one exception, he had nothing to regret, but he did regret that he had not introduced a drainage-tube. His reason for not using it was the complete absence of bloody stain in the last abdominal washings; but it is his rule to use a drain whenever there have been adhesions to separate; he had three tubes in use in other patients at that very time. He feels assured that if he had used a drainage-tube in this case the woman would have recovered.

Dr. H. A. Kelly considered the important error in this case was the neglect to insert a drainage-tube, and gladly made this subject the text of a few remarks. Operators at large should by this time have reached a common understanding as to just how and when the drainage-tube should be used. In the *first* place: whenever there is any denuded area as large as the palm of the hand, or smaller if there be a tendency to weep, a tube should be introduced, and sometimes when least expected several ounces of serum will well up through the tube daily, and the absorptive powers be saved a severe tax. *Second: Whenever in doubt, use the tube;* no harm ever comes from it when guarded with the antiseptic precautions now in common use.

His own plan is as follows: Pass all the silkworm sutures as if the whole length of the incision was about to be closed, slip in the drainage-tube (he prefers a straight glass one under ordinary circumstances), and run down the shot and close the wound to the tube, but the two sutures passing through the track of the tube are left long, to be used after the removal of the tube. He then, once or twice a day, draws out all serum accumulated in the pelvis by means of a long nozzle uterine syringe. When all discharge has ceased, provided it has been but sweet, clean serum, he withdraws the tube, and running the shot down on the two unused sutures, closes the wound perfectly, leaving only a linear cicatrix instead of a deep pit at the lower angle to be filled up by granulations and a large plug of scar tissue; this is also safe after suppuration, provided all suppuration has entirely ceased.

He does not like Koeberle's clamp, which had been used by Dr. Price in this case, and considers it far more dangerous, in every way, than the elastic ligature. Sänger's device, just announced, combining an extra- and intra-peritoneal treatment, promises much, and is certainly destined to repeated trial.

Dr. Montgomery thought the case one of extreme interest in point of diagnosis and treatment. The pressure of the tumor on the ureters causes changes in them, and also sacculation of the kidneys. He had operated in a similar case some years ago, and subsequent examination revealed sacculated kidneys, and pus in one; even if no knife had been used, the patient would have died from the ether. He thinks, with Dr. Price, that the drainage-tube should have been used in his case.

Dr. Joseph Price remarked that he had no fear whatever of the drainage-tube, and thought it might be used in every case. Tait's rule: "When in doubt, use the tube," was a good one. Dr. Price made some remarks upon his methods of using drainage-tubes of

glass, using cotton wick in some cases to remove accumulations of serum and to clear the openings of the tubes, using a sucking bulb with gum tubing to draw out fluid accumulations, and introducing a smaller gum tube through the glass one before withdrawing the latter.

DR. M. PRICE exhibited specimens from a case of

PYOSALPINX OF GONORRHŒAL ORIGIN.

Is pyosalpinx not generally or always the result of gonorrhœa? His cases have, without exception, followed attacks of gonorrhœa. Can such a sequel be anticipated and prevented?

DR. MONTGOMERY remarked that Dr. Noeggerath initiated the idea of latent gonorrhœa as the cause of salpingitis and pelvic peritonitis.

DR. M. PRICE remarked that his patients had been in robust health; they were generally women who had borne but one child, and the labor had been followed by repeated attacks of peritonitis.

DR. LONGAKER read a report of a case of

LAPAROTOMY FOR PYOSALPINGITIS.

Maggie T., aged 33, was admitted to Lying-in Charity Hospital November 13, 1886. She had one child eighteen years before, after a difficult and prolonged labor. Unmarried, and has a history of specific disease. During the last four years her periods have been accompanied by intense suffering, and in the intervals she was never free from distressing aches in the pelvis. Lately she had used opium to some extent. In addition to the evident enlargement of the appendages on both sides, the patient has a perineo-recto-vaginal fistula and a stricture of the lower end of the rectum. A diagnosis of pelvic cellulitis was made by him in this case two years ago. *Operation* November 18. The left tube, a sausage-shaped tumor, and the ovary, a fluctuating mass the size of a walnut, were easily removed; a small amount of pus escaped from the end after ligation, but this was arrested by pressure forceps. The ligature was necessarily passed over the uterus, but owing to friability of tissues, troublesome oozing continued and delayed closure of the abdomen. On the right side the ovary and tube formed a large abscess the size of a goose-egg. It was impossible to separate and remove this without rupture. It was filled with pus and altered blood. Adhesions were dense and firm. There was also some oozing on this side, but it gave rise to comparatively little trouble. The peritoneal cavity was irrigated with hot water; 1 to 5,000 bichloride solution sponges. Abdominal walls sutured with silk over which was placed an impervious coat of iodoform collodion. Convalescence uneventful. She is now free from pain.

DR. M. PRICE inquired about the source of hæmorrhage. He had seen severe hæmorrhages due to the fact that the tube was cut by the ligature. He thought it important to tie straight across the tube and not obliquely. He ligates by double ligature and ties back. He considers it right to open up at once if hæmorrhage is at all free; he does not think it right to trust to sponges and hot water.

DR. JOSEPH PRICE had seen very free hæmorrhage from adhesions to the bowels, large sinuses being laid open and pouring out blood. In several cases he had used iron as a styptic.

DR. LONGAKER explained that the hæmorrhage came from the opening up of the broad ligament.

DR. H. A. KELLY read a paper embracing

NOTES ON PALPATION OF THE FEMALE URETERS,

which will be published in full with diagrams.

DR. JOSEPH PRICE read an interesting letter from Dr. Joseph Eastman, summarizing the features of McDowell's early operations, showing how perfectly antiseptic his work was.

DR. COFFEE spoke of Dr. Sutton's work as being pioneer work. He gave up good practice and went to Europe to work up this field.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Antiseptic Treatment of Summer Diarrhœa—Officers of the Academy—Hospital Saturday and Sunday Fund.

At the last meeting of the Academy of Medicine Dr. L. Emmett Holt read a paper on the "Antiseptic Treatment of Summer Diarrhœa," which seems likely to have a marked effect upon the manner of dealing with this affection in the future. As he truthfully remarked, an examination of even the most recent text-books on the diseases of children will show that practically the same methods of treatment are inculcated which were in vogue fifty years ago; so that there would certainly appear to be some "room for improvement."

Dr. Holt said that he made use of the term summer diarrhœa as designating an affection with which all were familiar, but which did not involve any points of pathology about which there might be differences of opinion. While acknowledging the prime importance of suitable hyygienic conditions in the treatment, it did not come within his province on the present occasion to discuss these. With the exception of instances of pure cholera infantum, all cases of summer diarrhœa are, in his opinion, due to fermentation or putrefaction in the intestinal tract. Among the factors entering into the causation of the trouble he mentioned heat, improper feeding, and bad hygienic surroundings. The affection was evidently not due to heat alone, or else we should find the greatest mortality among infants under six months of age; which was not the case. During the first six months a much larger proportion of infants were wet-nursed than at a later period, and it was after this age that the greatest number of deaths was noted.

In treating of the influence of heat he spoke of its effect not only upon the child, but upon its food, and referred to an instance at the New York Infant Asylum in which no less than twenty-three children became affected with diarrhœa from the use of tainted milk. In tenement-houses all the conditions were

especially favorable to the contamination of this article of food, and it was only a wonder that more children did not suffer from this cause than was actually the case. In this connection he spoke of the development of poisonous ptomaines from food, and alluded particularly to the investigations of Professor Vaughan, of the Michigan State Board of Health, in regard to the principle which he had designated tyrotoxicon. Brunton's researches had also, he thought, furnished the solution of many hitherto insoluble problems. Cerebral symptoms had been generally supposed to be due to the sudden stoppage of the diarrhœa; but Huchard had shown that poisonous ptomaines were evolved from human fæces even in a state of health, and this was the case to a much more marked extent in such diseases as summer diarrhœa.

In this affection, Dr. Holt went on to say, the inflammatory changes are almost entirely confined to the large intestine. A specific microbe having a causative relation to the disease had not as yet been demonstrated; though numerous bacteria, of various kinds, were always found in connection with it. The indications for treatment were as follows: 1, clear out the bowels; 2, stop decomposition; 3, restore healthy action to the bowels; 4, treat the consequential lesions.

In the first place, it was necessary to clear out the bowels for the same reason that the surgeon thoroughly cleanses a wound before applying his antiseptics. In nearly all cases, Dr. Holt said, he began his treatment with a cathartic, in order to remove the altered secretions; and if the stomach was not very irritable, there was no purgative which was to be compared to castor-oil for this purpose. If the stomach was irritable, he was in the habit of using large injections of water by means of a fountain syringe. By experiment he has found that it takes almost a pint of fluid to reach the ileo-cœcal valve, and at least this quantity, he thinks, should be used. In many cases the castor-oil was all the medicine that was required, as a suitable dietetic and hygienic regimen would complete the cure. In cases in which the passages, consisting of pure serum, were odorless and alkaline in reaction, no preliminary cathartic was required.

In order to arrest decomposition and restore healthy action to the bowels, the most efficient agent that he had met with was salicylate of sodium. If there was much vomiting, it was better to withhold food altogether for from ten to twenty-four hours; employing carbonic acid water, or thin barley water, for allaying thirst. In children under 2 years of age no milk whatever should be allowed; though peptonized milk was less likely to do harm than either condensed or ordinary cow's milk. He had known many relapses to be brought on by the use of milk.

The treatment of the consequential lesions, the fourth point considered, consisted in, 1, appropriate dietetic treatment; 2, the continuation of the antiseptic; and 3, the washing out of the whole large intestine every day with pure water or a weak antiseptic or astringent solution. The medicinal agents which he preferred for these injections were benzoate of soda and nitrate of silver. It was a fact, he said, that all the drugs which had hitherto proved of service in the treatment of summer diarrhœa, with the exception of opium (in regard to which there had been much discussion), were of a more or less antiseptic nature. He then proceeded to give a *résumé* of the history of the use of antiseptic remedies proper in this affection, from the year 1846, when creosote was first employed for its relief.

In order to find out what is the present practice in New York institutions, Dr. Holt has written to the physicians of fourteen of these, including the Nursery and Child's Hospital, the Foundling Asylum, St. Mary's Hospital for Children, the Demilt Dispensary, and a number of other prominent hospitals and dispensaries, in which upwards of 40,000 children — 25,000 of them for diarrhœal diseases—are treated annually. He ascertained, among other facts, that opium was used in all, bismuth in all, chalk mixture, with paregoric and astringents, in quite a number, castor-oil as a preliminary medication in six, castor-oil emulsion, with equal parts of the oil and of paregoric, in three, calomel in three, ipecac in three, pepsin in one, iodoform in one, morphia and atropia hypodermically in one, and astringent injections in three.

In his own experience Dr. Holt found that with the use of opium, bismuth and astringents, 50 per cent. of cases are cured, and 7 per cent. died; the remainder being classified as improved and unimproved. A year ago last summer he first commenced the use of salicylate of sodium. In about two-thirds of the cases in which he employed it he gave castor-oil as a preliminary to the treatment, and out of 81 cases, 60 were cured, 14 improved, 6 unimproved, and 1 died. He also treated 44 cases with naphthaline, 22 with resorcin, and 28 with bichloride of mercury. The comparative results of the different remedies were as follows: Cured by opium, bismuth and astringents, 50 per cent.; cured by salicylate of sodium, 84 per cent.; cured by naphthaline, 67 per cent.; cured by resorcin, 55 per cent. He, therefore, considers the salicylate of sodium the most efficient remedy; and next to this comes naphthaline.

Having related an illustrative case in which the sodium salicylate, administered after a preliminary dose of castor-oil, had effected a cure in an apparently hopeless case, he stated that he is in the habit of giving this remedy in doses of from 1 to 3 grains, in aqueous solution, every two hours; and recommended that it should be administered with the food or drink. It did not produce vomiting, but, on the contrary, often allayed irritability of the stomach. Naphthaline could be given in doses of from ½ grain to 5 grains, and resorcin in doses of from ½ grain to 2 grains. Bichloride of mercury, which should be given in doses of from $\frac{1}{120}$ to $\frac{1}{100}$ of a grain, was sometimes apt to produce vomiting. Dr. Holt said that he did not undervalue the efficiency of opium in other forms of diarrhœa.

In conclusion, he stated that the use of evacuants constituted an essential part of the antiseptic treatment of summer diarrhœa, and that he considered the latter especially valuable because it was aimed at the cause of the trouble in the intestinal canal, and not simply at its effects.

In the discussion which followed the reading of the paper Dr. Wilcox related his experience with naphthaline in the treatment of diarrhœa; stating that he had employed it in thirty-two cases, though nearly all of them were in adults. In his hands it had proved so efficient that he had come to regard it of the same value in diarrhœa as mercury in syphilis, or quinine in malarial trouble. In order to secure its full effect the patient should take at least 60 grains a day, and in some cases as much as 120 grains was required. He gives it chiefly in starch capsules, with some oil of bergamot to conceal its odor. Occasionally he has found that the urine becomes smoky under its use, but he has never been able to detect any albumen or casts in it. In one case of twenty-four years' standing, in a man 61 years of age, a cure was effected by the use of 90 grains a day. In two cases he has employed it successfully in the diarrhœa of typhoid fever. The patients were in the third week of the disease, and took from 60 to 90 grains a day; which reduced the stools to two in the twenty-four hours, and rendered them perfectly odorless. Naphthaline has also an antipyretic effect in these cases, and Dr. Wilcox regards it as quite as safe as antipyrin, thallin, or any of the other agents of this class now in use. He has also tried resorcin to some extent, but with very indifferent results.

Dr. Andrew H. Smith remarked that it had been his idea for some time that the cause of summer diarrhœa could be best treated by the aid of antiseptics. The essential oils which were in common use in domestic practice were really antiseptics, and the same was true of the pennyroyal, spearmint and peppermint teas so often resorted to in the country.

Dr. Van Santvoord said that Dr. Holt was no doubt correct in considering the disease primarily dyspeptic in character. He thought bismuth was of service not simply from its mechanical effect, but because it was a true antiseptic. The inflammatory changes were largely located in the large intestine, and he was in the habit of employing large astringent injections, in which he combined an alkali with the astringent, in order to remove the mucus which covered the parts.

The President, Dr. Jacobi, said that he quite agreed with Dr. Holt as to the antiseptic character of remedies long in use. As regards bismuth, which he never considered simply as an inert mechanical substance, he had published an article twelve years ago in which he distinctly claimed that it was an antifermentative. He also agreed with Dr. Holt as to the importance of appropriate dietetic treatment, and particularly in regard to the danger from milk, which it was often necessary to withdraw for a number of days. For twenty-five years, he said, he had taught that the disease could not be cured unless milk was given up as a food; but there were plenty of things which could be temporarily substituted for it. He himself generally used the white of egg, raw, mixed with barley water.

Dr. Peabody said that he had come to look upon naphthaline as a very valuable addition to our therapeutical resources in a number of intestinal complaints. For some time past he had been using it in all the earlier cases of typhoid fever which came under his care at the New York Hospital, and in several instances the disease had apparently been aborted by the remedy. He referred particularly to a case which came under treatment on the second day of the disease. By the thirteenth day the fever was gone and convalescence was established, although the patient had had the usual prodromal symptoms of typhoid, and the characteristic eruption and enlargement of the spleen had been well marked. All his cases of typhoid fever, he said, were given a preliminary full dose of calomel. In conclusion, he mentioned some obstinate cases of chronic diarrhœa which had been promptly cured by the use of naphthaline.

In bringing the discussion to a close Dr. Holt stated that Dr. Caldwell, who had expected to be present, had used salicylate of sodium with much success in twenty cases of the diarrhœa of phthisis.

At this meeting the following officers of the Academy were elected: President, Dr. A. Jacobi; Vice-President, Dr. Wm. H. Draper; Treasurer, Dr. W. F. Cushman; Member of the Board of Trustees, Dr. Everett Herrick.

The amount thus far reported from the annual Saturday and Sunday Hospital collection is about $40,000, and there is reason to suppose that the grand total will exceed that of last year. P. B. P.

BOOK REVIEWS.

WÖRTERBUCH DER BACTERIENKUNDE. Bearbeitet von DR. W. D. MILLER, Professor am Zahnärztlichen Institut der Universität Berlin. Stuttgart: Verlag von Ferdinand Enke. 1886.

DICTIONARY OF BACTERIOLOGICAL SCIENCE. By DR. W. D. MILLER, Professor in the Dental Department of the University of Berlin. Sm. 8vo. Stuttgart: Ferdinand Enke. 1886.

To Professor Miller the Profession in general and bacteriologists in particular should be grateful for this Dictionary of Bacteriological Science, which he has so carefully and laboriously compiled. In this, his own country, and in Germany, Prof. Miller is well known through his writings, not only concerning dentistry, but also concerning those microörganisms which represent the lowest forms of life, and which are so near the border line that biologists had much discussion whether they should be classed in the vegetable or the animal kingdom.

Prof. Miller is the first and only American who has been raised by the German Government to the honorable position of Professor in the University of Berlin. He has discovered, described and named several microörganisms, perhaps the most important of which are those which cause dental caries, and the Miller bacillus. The latter is a comma bacillus found in the human mouth, and which, though for a long time recognized as morphologically similar to that ascribed by Koch to cholera Asiatica, and to that by Finkler and Prior to cholera nostras, yet was so re-

sistant of isolation by the efforts of all bacteriologists, that it remained for Prof. Miller to obtain pure cultures of it only after repeated attempts.

The Dictionary describes not only a long series of different kinds of microorganisms carefully selected from the great mass of literature on this subject, and scattered through the different modern languages, but also the various technical expressions which have been recently coined to meet the needs of the bacteriologist, who, together with the practicing physician, has appreciated the want of just such a work. The former will look herein to find the nomenclature, description and source of those microörganisms with which he may chance to be less familiar, and the latter can obtain ready reference to the bacteriological names and expressions which appear in the course of his general reading.

It may be expected that an edition in English will soon appear.

Milk Analysis and Infant Feeding. By A. V. Meigs, M.D. 8vo, pp. 102. Philadelphia: P. Blakiston, Son & Co. 1886. Chicago: W. T. Keener.

In this little book Dr. Meigs attempts to show that the great majority of analyses of human milk made by various chemists are wrong. He claims to have discovered that the caseine of human milk amounts to seldom more than one per cent.

Dr. Meigs has evidently undertaken to work in a field where he is not at home. This subject has been thoroughly discussed years ago, and by men who are well known as thoroughly trained chemists. Their conclusions do not agree with those of Dr. Meigs.

In the part of the book relating to infant feeding, the author presents a number of practical observations from the experience of himself and others, and makes suggestions as to what is the proper food for infants of different ages.

MISCELLANEOUS.

Hot Springs Water.—A circular recently issued by the War Department says, in regard to the water of the Hot Springs of Arkansas: Relief may reasonably be expected from the use of the Hot Springs water in the following classes of diseases, viz., gout and rheumatism in their various forms, after the acute or inflammatory stage has passed; neuralgia, peripheral or central, especially when depending upon gout, rheumatism, specific infection, or metallic poisoning; paralysis, if not recent, progressive, or organic; locomotor ataxia, or tubes, if not in advanced stages, and especially if traceable to specific infection; Bright's disease of the kidneys, only in the early stages; diseases of the bladder and urinary organs; functional diseases of the liver; dyspepsia; chronic diarrhœa and catarrhal diseases generally; chronic skin diseases, especially of the squamous or scaly forms; chronic conditions, resulting immediately from specific infection, either syphilitic or malarial; chronic alcoholism.

In general terms, it may be stated that the Hot Springs water acts by stimulating all secretions and organic functions, increasing appetite, promoting digestion and assimilation; favoring tissue change and excretion of waste products, relieving internal congestions, and stimulating the blood-making function.

In the following classes of diseases the use of the Hot Springs water is contraindicated: All acute, inflammatory diseases; tuberculosis; organic diseases of the heart and brain; aneurism; cancer; and all diseases in which stimulation of the circulation is to be avoided.

Collective Investigation on Centenarians.—The late Dr. Farr has shown, in his "March of an English Generation through Life," that one million children born in England live forty million, eight hundred and fifty-eight thousand, one hundred and eighty-four years, that two hundred and twenty-three live to the age of one hundred, and that finally at the age of one hundred and eight, one solitary life dies.

In the supplement to the *British Medical Journal* of December 11, Prof. Humphry has analyzed the returns from reliable medical men regarding fifty-two centenarians tabulated from the results of a form of inquiry issued by the Collective Investigation Committee of the British Medical Association. In only eleven was the age confirmed by any official record, but the others were naturally assumed to have at least reached nearly the age of one hundred, the informant, in each case, being competent to estimate the value of the evidence, and in most of the cases being intimately acquainted with the individual.

In eleven the intellect is stated to have been high, and low in only five; twenty were reported strong, sixteen of average strength and twelve feeble. Thirty-six were women, sixteen men—a fact explained by Mr. Humphry partly by the fewer exposures of women, notwithstanding the dangers incidental to childbearing and the diseases associated with the varying demands made at different periods upon the organs connected with that process; and partly also by the greater inherent vitality in the female.

Of the thirty-six women, twenty six had been married, eleven had large families, and eight married before they were 20, one at 16 and two at 17. Many of the centenarians were members of large families, there being but two designated as only children. Forty-one of the fifty-two had been married. Twelve were first children. The parents of one centenarian were first cousins.

The average centenarian qualities were a good family history, a well-made frame of average stature, spare rather than stout, robust, with good health, appetite, and digestion, capable of exertion, good sleepers, of placid temperament, and good intelligence, with little need of, and little consumption, of alcohol and animal food, although one man always did and "always will" drink to his utmost capability.

Three were affluent, nineteen poor, and twenty-eight in comfortable circumstances.

Twenty-four of the centenarians had no teeth, and the average number retained was only four or five.

Twenty-eight used glasses, but thirty-five, including many who used glasses, were reported to have been in the enjoyment of good sight. Hearing was good in twenty-two, indifferent in seventeen, bad in nine, one was deaf.

The majority were moderate or small eaters, but maintained an average pulse of 70 and respiration of 22—a fact explained by the diminished elasticity of the circulatory and respiratory apparatus. The arteries had become less capable of accelerating the blood-stream, and the vital capacity of the chest was much reduced, as shown in the slight difference in the chest-girth between the state of inspiration and that of expiration. The hours of sleep averaged nearly nine, the extremes being twelve and four.

The brain held out as well as the other organs, perhaps better; two only were demented. The weakness or failing, generally, seemed to have been about equal in the several great organs.

The majority had suffered little from illness at former periods, yet some had recovered from severe diseases. The habits of life were generally such as conduce to health, necessitated in a measure, at least, by some from their occupations. Thirty-two did not use tobacco; twelve were total abstainers from alcohol, twenty-two took little, eight drank moderately, one drank to excess, on festive occasions, one was a free beer-drinker, and one "drank like a fish all his life" when he could, but said also that he could not get much.—*Boston Med. and Surg. Jour.*, January 13, 1887.

ASEPTOL: A NEW DISINFECTANT.—This substance is orthophenol-sulphuric acid, and has been known since the year 1841. It has been lately brought forward in France as a disinfectant, and Dr. Huppe (*Centralb. f. d. Med. Wiss.*, No. 50, 1886), has made experiments with it, which have led him to the opinion that it possesses advantages entitling it to rank beside carbolic acid and bichloride of mercury. Commercial aseptol is a syrupy liquid, having a faint odor of carbolic acid. It is soluble in all proportions in water, alcohol, and glycerine, and even in a 10 per cent. solution has no caustic action upon the skin. Such a solution kills spores of anthrax in thirty minutes, whilst a 5 per cent. carbolic acid solution requires at least twenty-four hours to produce the same effect. A 3 or 5 per cent. solution of aseptol is a true disinfectant for spore-free microorganisms, or for such as do not form endogenous spores. A 3 per cent. solution was found quite sufficient to disinfect the (previously cleansed) hands. Solutions of aseptol in alcohol, glycerine or oil (in the last named no permanent solution takes place) showed no disinfectant power. By heat it is changed into the corresponding para-combination.

DEATH OF DR. JOHN SCOTT.—John Scott, M.D., M.R.C.S.I., of San Francisco, died of acute pericarditis on December 24. He was born in Ireland, and was about 58 years of age at the time of his death. In his early professional life he was in India for a number of years. When he came to New York in 1865 he spent several months in the study of gynecology under Dr. Emmet, and afterwards went to San Francisco and organized the California State Woman's Hospital, of which he was chief surgeon. Though not a voluminous he was a good writer, a genial companion, and a honor to his profession.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.—The next meeting of this Society will be held at Crab Orchard Springs, Ky., in July, 1887. There is every prospect of a large attendance, and the papers to be presented give promise of being of unusual value. Physicians having cases to report should communicate with Dr. J. L. Gray, corner Wabash Avenue and Sixteenth Street, Chicago.

THE INDIANA STATE BOARD OF HEALTH.—The Governor of Indiana says in his annual message: The State Board of Health recommends several amendments to the present law to increase its efficiency, to extend its jurisdiction over diseases of domestic animals, and to create the office of State Veterinarian. The Board states that as the people become more familiar with the operations of the various organizations, and the objects to be attained, the more popular the law becomes, and the more readily the rules and regulations of the Board are observed.

PORT PHYSICIAN OF PHILADELPHIA.—The *Sanitary News* says: A lively scramble is being made by Philadelphia politicians for the position of Health Officer of the port, which is an office in the gift of the new governor. A singular and noteworthy fact is that not a solitary name has been suggested for the position which stands for a sanitary worker. They are all political workers. May none of them get there!

SANITARY ASSOCIATION IN MONTREAL.—A much needed Sanitary Association, with 125 members, has been organized in Montreal.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 7, 1887, TO JANUARY 14, 1887.

Lt.-Col Jos. C. Baily, Asst. Medical Purveyor, ordered from Dept. East to New York City, to take charge of the medical purveying depot in that city, relieving Capt. Henry Johnson, Medical Storekeeper, from duty as acting assistant medical purveyor. S. O. 9, A. G. O., Jan. 12, 1887.

Major Harvey E. Brown, Surgeon, granted leave of absence for six months, on surgeon's certificate of disability, with permission to leave the Div. of the Missouri. S. O. 9, A. G. O., Jan. 12, 1887.

Capt. J. K. Corson, Asst. Surgeon, ordered to Ft. Coeur d'Alene, I. T.

Capt. C. E. Munn, Asst. Surgeon, ordered to Ft. Canby, W. T.

First Lieut. J. M. Banister, Asst. Surgeon, ordered to Ft. Coeur d'Alene, I. T. S. O. 227, Dept. Col., Dec. 31, 1886.

Capt. Richards Barnett, Asst. Surgeon, leave of absence further extended six months on account of sickness. S. O. 9, A. G. O., Jan. 12, 1887.

First Lieut. Geo. F. Wilson, Asst. Surgeon, leave of absence extended twenty days. S. O. 9, A. G. O., Jan. 12, 1887.

First Lieut. H. I. Raymond, Asst. Surgeon, ordered for duty at Presidio of San Francisco, Cal. S. O. 127, Dept. Cal., Dec. 29, 1886.

First Lieut. F. J. Ives, Asst. Surgeon, granted one month's leave of absence, with permission to apply for twenty-three days' extension. S. O. 1, Dept. Platte, Jan. 3, 1887.

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ORIGINAL ARTICLES.

THE OSTEOPLASTIC RESECTION OF THE FOOT, as Devised by Wladimiroff and Miculicz.

Read in the Section on Surgery of the American Medical Association, May, 1886.

BY CHRISTIAN FENGER, M.D.,

PROFESSOR OF CLINICAL SURGERY IN THE COLLEGE OF PHYSICIANS AND SURGEONS, CHICAGO; SURGEON TO COOK COUNTY HOSPITAL, THE EMERGENCY HOSPITAL, CONSULTING SURGEON TO THE GERMAN HOSPITAL; FELLOW AMERICAN SURGICAL ASSOCIATION, AMERICAN MEDICAL ASSOCIATION, OF THE GERMAN SURGICAL ASSOCIATION, OF THE BRITISH GYNECOLOGICAL SOCIETY, ETC., ETC.

One of the characteristics of aseptic surgery is conservatism; this is especially seen in the hesitancy with which, in certain cases, modern surgeons resort to amputations, and in their endeavors to devise less mutilating operations. At the present day joints are excised, partially or totally, and portions of the tarsus or carpus are removed in cases where, in former days, nothing short of an amputation would have been thought of.

The osteoplastic resection of the foot has lessened, and is destined still further to lessen, the number of cases in which amputation of the foot above the malleoli is called for. The operation is indicated when the soft or osseous structures of the heel are destroyed so extensively that there is not sufficient skin or bone left on which the weight of the body can rest. It will thus be had recourse to in certain cases in which Pirogoff's operation or Sédillot's *évidement* cannot be performed, *e. g.*, where there is tuberculosis of the body of the os calcis, with or without fistulous openings, or where there is extensive loss of cutis on the heel. In such cases Pirogoff's operation is impracticable; for to be successful, the posterior half-inch or inch of the calcaneum must necessarily be healthy, and the skin of the heel must be reasonably well preserved. Cicatricial tissue, as is known, is of low vitality; it is unable to endure the pressure and friction incident to walking; it is thinned by "usure," becomes necrotic, and the omnipresent pus microbes gain admittance to the denuded tissue.

Sédillot's *évidement* also has its limitations. Where the operation leaves large cavities, in a patient older than 10 years, the cavities will, as a rule, never fill with bone. If the greater part of the spongy substance of the calcaneum be removed with a gouge; if, as Sédillot says, a mere shell of bone be left, the calcaneum will, in many instances, be unfit to walk upon; it is too weak, its spongy substance is but imperfectly reproduced. In such cases the only operation by which, formerly, the patient could be relieved, was amputation above the malleoli.

In 1872 a Russian surgeon, Wladimiroff, read before the Medical Society of Kasan, Russia, a paper on several new osteoplastic operations which he had performed on the lower extremity. Among them he described an operation by which he formed, according to his phraseology, an artificial *pes equinus*. He had had a case where there was chronic destructive disease of the astragalus and calcaneum, with loss of skin on both sides of the lower astragalus joint. The cuboid, scaphoid and remaining bones of the foot were sound. Being desirous of having the patient walk on his foot, of preserving the sound parts of the member, and of obtaining a clean wound which would be likely to heal by first intention, he conceived of the following operation, which he carefully studied and practised on the cadaver:[1] He removed the astragalus and calcaneum with the skin covering the heel, and united the cut surfaces of the scaphoid and cuboid bones with the tibia and fibula; the last two bones he cut just above the malleoli. Wladimiroff operated March 2, 1871, and published the case on February 11, 1872. He stated that his patient, a boy of 15, could walk without a cane, and that he walked well with a cane. As this case was published in the Russian language, it was almost as good as lost to the medical profession in all countries except Russia.

In 1881 Miculicz, of Vienna, having no knowledge of Wladimiroff's case, devised an operation similar to, or rather identical with that of the Russian surgeon.[2] As the profession became acquainted with the operation through Miculicz, his name has been attached to it. At the Eighth International Congress in Copenhagen, however, Professor Sklifossoffsky, of Moscow, stated that Miculicz's operation had been known in Russia for some years past, and that the idea of forming an artificial pes equinus was due to Wladimiroff. Miculicz's case is as follows:

A man of 22 years suffered from a serpiginous ulcer which, destroying the skin, had extended from the malleoli around the heel to the anterior half of the sole of the foot. The skin on the dorsum of the foot remained intact. Miculicz incised the ankle joint, removed the astragalus and os calcis with the integument, and sawed a disc off the scaphoid and

[1] Fischer, Zur osteoplastishen Resection des Fusses durch Wladimiroff-Miculicz. Deutsche Zeitschrift für Chirurgie. Bd. 23, p. 162.

[2] Miculicz. Eine neue osteoplastische Resectionsmethode am Füsse. Archiv für klinische Chirurgie, Langenbeck, 1881. Bd. 2[illegible], Heft 2, p. 494.

cuboid bones. The steps of the operation were as follows: An incision was made across the sole of the foot from the tuberosity of the scaphoid to a point a little posterior to the tuberosity of the fifth metatarsal bone. From the ends of this incision he cut upwards and backwards on both sides of the foot as far as the malleoli, and made a fourth incision between these two points posteriorly to the joint. He then disarticulated at the ankle, cutting from behind, and brought the foot into dorsal flexion; the astragalus and os calcis were detached from the soft parts on the dorsum of the foot and Chopart's joint opened from above. Having obtained with a saw cut surfaces at the ends of the tibia and fibula above the malleoli, and cut surfaces at the posterior parts of the cuboid and scaphoid bones, he brought these surfaces into apposition, and thus placed the foot in the position of a pes equinus. The wound healed in two months. In four months his patient walked without a cane in a boot constructed for the purpose. A few weeks later he walked without the boot and was able to bear his whole weight on the resected foot.

In order to illustrate the operation I will give the history of my case, and later I will discuss the indications for the operation, the method of performing it, and its results:

Synopsis.—Traumatic injury to the right heel resulting in chronic progressive osteo myelitis and periostitis of the os calcis and the talus of ten years' duration. Osseous ankylosis of posterior talus joint and of Chopart's joints, fibrous ankylosis of ankle-joint. Ulcerative destruction of the skin on the posterior surface of the heel. Repeated local operations on the calcaneum without permanent benefit. Abscess and subsequent intractable fistulas on the dorsal side of the talus, leading to diseased bone in the sinus tarsi. Osteoplastic resection of the foot in accordance with Miculicz's description. Consolidation of the foot in good condition. No relapse of the disease in the bone; forcible extension of the toes into the equinus position. Rupture of skin at the base of the first phalanx of the hallux. Subsequent inflammation of the scar. Excision of the scar and transplantation of skin from the planta pedis. Healing by first intention. Patient is able to walk without cane, and can bear the whole weight of his body on right foot.

Christian Jebsen, æt. 28, laborer, gives the following history: *His father* was troubled for many years with annually recurring attacks of facial erysipelas; his mother suffered from a chronic pulmonary disease and varicose ulcers of the left leg. Patient's health was good up to his 18th year. At that time patient followed the occupation of a sailor. On board ship he received an injury in his right heel from a pointed iron rod which was thrown at him by the captain of the vessel. The point of the rod entered the os calcis posteriorly and passed forward and downward for about one half inch. The wound suppurated one year, during which time patient was in poor health. He was confined to his bed most of the time. Two months after closure of the wound the cicatrix opened; this, together with swelling and tenderness around the os calcis and its articulations, rendered patient an invalid for three years. The wound again healed, and swelling and tenderness diminished so far as to enable patient to wear a boot and to walk without suffering much pain. Six months later a sinus showed itself, through which a probe could be passed into the bone. This sinus closed after several months. Patient then came to America. He had been here but five months when again a fistula began to discharge. In 1883 he was admitted to the Cook County Hospital, where the sinus and a cavity which was found in the posterior part of the os calcis, were scraped with a sharp spoon and gouge. In three months the cavity filled and the wound closed. Patient was discharged in November, 1883. He was able to walk some, but movements of the foot were limited and painful. Swelling and tenderness remained. In the spring of 1884 he returned to the hospital with a running sinus. Dr. Verity removed part of the os calcis, excised the cicatrix and united the skin over the remainder of the bone. The wound did not heal; six months after the operation an abscess formed on the dorsum of the foot over the astragalus.

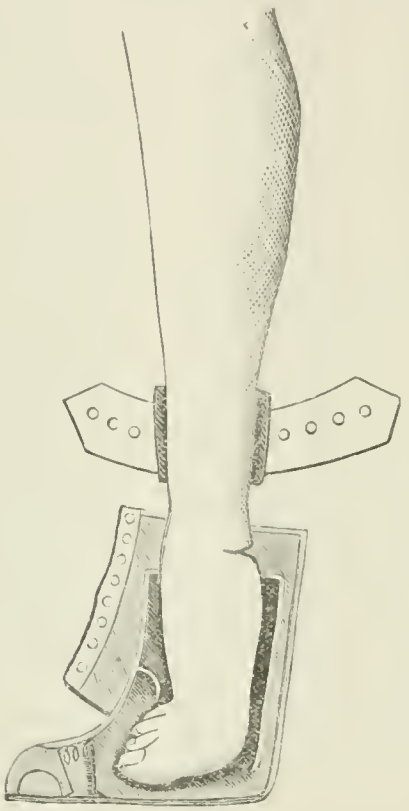
Patient now passed into my care. I found him pale and poorly nourished; lungs, heart and abdominal organs healthy; urine normal. The right foot was fixed in plantar flexion at an angle of about 30°. There appeared to be complete ankylosis in all the joints from the ankle to Chopart's articulation. On the posterior and inferior surfaces of the heel there was an adherent cicatrix, roundish in shape and about 1½ inches in diameter. The centre of this cicatrix presented a granulating spot where a probe could be passed to the roughened surface of the calcaneum. The soft parts around the ankle and on the dorsum of the foot were swollen and indurated. An abscess on the dorsal side of the astragalus was opened and about a tablespoonful of pus evacuated. The probe discovered roughened surfaces of bone in the sinus tarsi. I drained the abscess, placing a tube transversely behind the flexor tendons; scraped the granulating spot on the heel and applied an iodoform dressing. The wound was treated for four months with injections of tincture of iodine and of a solution of iodoform in ether. As the condition remained the same it became necessary to decide whether the foot should be amputated above the ankle or resected according to the method of Miculicz. The loss of skin on the heel and the diseased condition of the bone put Pirogoff's operation out of the question. As the patient wished to retain as much of his foot as possible, I determined on Miculicz's operation, which I performed upon him December 31, 1884.

After thorough disinfection of the foot and leg as high up as the knee, patient was anæthetized, turned over on his stomach, and Esmarch's elastic bandage applied. As there had been an abscess on the dorsal side of the astragalus, and as there remained considerable infiltration of the tissues around the flexor tendons and in the neighborhood of the arteria dorsalis pedis, I dared not rely upon this artery alone for the blood-supply of the foot. I desired to pre-

serve the posterior tibial artery as far down as I possibly could; at all events down to its division into the internal and external plantar arteries. I was consequently compelled to make my incisions somewhat different from those made by Miculicz. I began my internal incision in the planta, three-fourths inch from the inner margin of the sole, and three-fourths inch posterior to the tuberosity of the scaphoid. From this point I curved my knife, cutting down to the bone, backwards and upwards over the internal surface of the os calcis, below the sustentaculum tali, to the inner border of the tendo Achillis; thence upwards along the tendon to a point posterior to the ankle joint. In making my external incision I commenced one inch behind the tuberosity of the fifth metatarsal bone in the margin of the foot; I then cut upwards and a little backwards, running the incision half an inch anterior external malleolus, over the external surfaces of the processes anterior calcanei and the body of the astragalus to the ankle joint. Between the upper and lower ends of these incisions I made transverse incisions across the sole and behind the ankle joint respectively, cutting down to the bones. The superior transverse incision dividing the tendo Achillis, gave a ready access to the ankle joint. The soft parts of the dorsal flap were detached from the subjacent bones with a periosteal elevator, which was kept between the periosteum and bone in order to avoid injuring the vessels. The disarticulation at the ankle joint was accomplished with some difficulty, as a complete osseo-fibrous ankylosis was found to exist between the astragalus and the tibia. Having disarticulated, I pushed the heel downwards and further detached, with the periosteal elevator, the anterior soft parts from the astragalus. From inactivity and the proximity of a suppurative inflammation, the bones had undergone fatty atrophy (adipose osteoporosis); they were so friable as to break in or near Chopart's joint, which was completely ankylosed. The posterior parts of the scaphoid and cuboid bones were now gouged away as far as diseased; after healthy bone was reached a thin disc was sawed off each bone in order to obtain even and smooth bony surfaces. The ends of the tibia and fibula were sawed off half an inch above the joint. The sinuses that existed in the dorsal flap were scraped with the sharp spoon. Esmarch's bandage was now taken off and the hæmorrhage stopped. After this the cut surfaces of the scaphoid and cuboid were brought into apposition with the corresponding surfaces of the tibia and fibula, and held in place by means of two silver wire sutures. The wound was lightly dusted over with iodoform, the soft parts were united with deep catgut and superficial silk sutures, and the necessary drainage was provided for. The foot and leg, half way up the thigh, were enveloped in an iodoform-Lister dressing and immobilized with plaster of Paris bandages.

The soft tissues on the inner side of the foot naturally formed a bulky mass. I preferred to leave this and to allow it to undergo atrophy in the future. By diminishing its size I should have run the risk of losing important branches of the posterior tibial artery. The circulation in the distal portion of the foot was perfect; after removal of the elastic constrictor blood was seen to ooze from all parts of the peripheral side of the wound.

The wound healed (definitively) in four months. During this time a few small abscesses formed in the just-mentioned mass of soft parts on the inner side of the foot. One also appeared behind the tibia. These abscesses being promptly opened and drained, caused no further trouble.



MICULICZ S BOOT.

As the toes of the foot were fixed in semiflexion, and as they possessed but little mobility, it became necessary to effect their complete dorsal flexion in order to enable the patient to walk on the balls of the first phalanges. Two months after the operation, in June, 1885, the patient was again anæsthetized and the toes were forcibly extended, *i. e.*, flexed on the dorsum of the foot. The flexor tendons, as well as the metatarso-phalangeal joints had (from non-use) almost entirely lost their mobility; the skin covering the plantar surfaces of the joints was contracted. As a consequence of this condition the skin gave way beneath the first and second metatarso-phalangeal joints, and the first phalanx of the great toe was fractured just anterior to the joint. The wounds resulting from these ruptures of skin were irrigated with an antiseptic solution and packed with iodoform gauze. An extensive Lister dressing was put on and the dorsal flexion of the toes maintained by a plaster cast. These small wounds healed in about a month. Patient was

TABLE OF OPERATIONS.

No.	Operator.	Year.	Age.—Sex.	Disease.	Course.	Death.	Result.
1	Wladimiroff.	1871	Boy. 15.	Tuberculous caries of talus and calcaneus; tuberculous ulcers on both sides of the joint.	Recovery.		After 12 months walked well with a cane, able to walk without cane. Lengthening.
2	Miculicz.	1880	Man. 22.	Serpiginous ulcer (syphilis) on calf of leg, on heel and posterior half of plantar surface of foot. Bones and joints healthy.	Wound healed in two months.		In 4 months walks without cane and without boot. In 6 months does hard work; can walk one hour. Lengthening 1½ ctm.
3	Socin. (Reported by Burchart.	1881	Girl. 22.	Caries.	Healed rapidly.		In 2 months walks with cane; later she works in the field; 2 years later no fistula. Lengthening 1½ ctm.
4	Miculicz.	1881	Woman. 27.	Tuberculosis of posterior astragalo-calcaneal articulation. Evidement and removal of a sequestrum of no avail.	Healing by first intention.	6 mos. later, of tub. pul.	In 2 months commenced to walk. Lengthening 1½ to 2 ctm.
5	Sklifossoffsky (Moscow)	1882	30.	Caries.	Recovery.		When reported in 1882 did not walk very well.
6	Lümniczer (Reported by Haberern).	1882	Boy. 18.	Tuberculosis of the talus, calcaneus, and malleoli and the joints from ancle to Chopart's articulation. Fistulæ and fungous ulcers on the skin of the heel. Syme's and Pirogoff's operations impossible.	Relapse of the tuberculosin the wound.		Amputation above the malleoli: recovery 5 months after the operation.
7	Miculicz.	1883	Boy. 16.	Tuberculosis, traumatic, of the posterior astragalo-calcaneal articulation. Numerous fistulous openings through skin of heel. Evidement of cuboid and scaphoid bone at the operation.	Healing by first intention under two dressings.		In 4 months walks with boot and cane fairly well. In 6 months solid ankylosis. Can walk without boot, but must use cane. Can walk in boot without the cane. Lengthening 1½ ctm.
8	Lauenstein.	1883	Woman. 32.	Tuberculosis of the talus, calcaneus —upper posterior part—and internal malleolus. Evidement. Relapse in ankle and posterior astragalo-calcaneal articulation.	Healing of wound in three months.	8 mos. later, of tub. pul.	The stump was painless and could bear some weight.
9	Lauenstein.	1883	Man. 25.	Tuberculosis in posterior astragalo-calcaneal articulation. Evidement. Relapse in ankle-joint. Abscess in plantar side of foot.	Healing in one and one-half months.		In 2 months can walk without pain. In 3 months works as a plasterer, in boot. Lengthening 3 ctm. Five months later walks 4 hours without pain.
10	Miculicz.	1883	Man. 50.	Tuberculosis of talus and calcaneus.	Healing.		Walks fairly well with cane; no difference in length visible when he walks.
11	K. Roser.	1883		Caries.	Recovery.		Good functional result.
12	Kümmel.	1883	Woman. 38.	Tuberculosis of the calcaneus. Extirpation. Relapse. Extirpation of the talus and malleoli. Relapse.	Healing of wound; relapse four months later, removal of the rest of the tarsus, part of the metatarsus, and an additional piece of tibia and and fibula.		In 7 months after last operation can walk with a plaster cast. Lengthening 6 ctm.
13	Schattauer.	1884	Girl. 10.	Tuberculosis of ankle-joint and swelling of posterior part of the foot; fistulas below the external malleolus. Tuberculosis pulmonum incipidus; fever; emaciation.	Healing by first intention.		In 5 weeks walks in plaster cast In 5 months walks in a common shoe for hours without pain; both legs of equal length.
14	Schattauer.	1884	Boy. 9.	Tuberculosis of ankle and posterior astragalo-calcaneal articulation and along the tendo Achillis.	Relapse of the tuberculosis.		Amputation above the malleoli. Recovery.
15	G. Fischer.	1884	Girl. 18.	Tuberculosis of posterior astragalo-calcaneous articulation. Fistulas. Evidement. Relapse.	Relapse of tuberculosis after 8 months. Removal of cuboid and 2d and 3d cuneiform bone.		Six months after last operation; can walk slowly without boot. Walks well with boot and cane. Mounts stairs.
16	Ranke. (reported by W. Reussen.)	1884		Cicatricial contraction of the foot in the position of equino-valgus, subsequent to a badly treated suppurating fracture above the malleoli.	Healing in 3 months.		7½ months after the operation walks very well with boot. The leg operated upon is 3½ ctm. shorter than the other.
17	Sordina.	1885	Man. 20.	Caries of the tarsus involving the ankle joint.	Gangrene of the foot on the fourth day.		Amputation above the malleoli. Recovery.
18	Sordina.	1885	Girl. 11.	Caries of the talus. Evidement. Relapse in the talus and calcaneus. Tuberbulosis around the extensor tendons.	Healing in 7 weeks.		In 7 weeks able to walk without cane; walks almost without limping.
19	Chr. Fenger.	1885	Man. 28.	Chronic traumatic osteo-myelitis for ten years. Ankylosis of the joints from ankle to Chopart's articulation Fistulas leading to suppurating bone in the sinus tarsi. Ulcerating cicatrix on posterior and lower surface of the heel. Evidement and plaster operations twice. Relapse.	Healing definite in 4 months. In 6 months toes dorsalflexed; 12 months after the operation plastic transplant of skin from plant healing in 4 weeks.		Fifteen months after the operation can walk without boot and cane, and bear the whole weight on the foot. Solid ankylosis. Lengthening 5 ctm.

then allowed to step on the foot. He was furnished with a boot made according to the plan designed by Mikulicz, and discharged from the hospital.

He gradually learned to bear some weight on the foot. But the cicatrix on the plantar surface of the great toe, where the skin had broken in making dorsal flexion, soon began to ulcerate; either because patient's boot did not fit, or because the cicatrix was insufficient to bear his weight in walking. In January, 1886, he had an attack of facial erysipelas, for the treatment of which he returned to the hospital. After his recovery from the erysipelas I ordered him disinfected for the final trifling operation which the case required. I had his whole body shaved and sponged with a weak sublimate solution. I then excised the cicatrix beneath the metatarso-phalangeal joint of the great toe, and transplanted to the wound a flap of skin from the sole of the foot. The dimensions of the cicatrix were one inch transversely and three-fourths inch antero-posteriorly; those of the flap were three inches by one and one-half inches. The flap, which had been loosened from the plantar fascia, and to which the adipose tissue was left adherent, was united to the skin of the great toe. The wound remaining in the place from which the flap had been cut, was packed with iodoform gauze and left to cicatrize. A cicatrix thus situated could do no harm, as it would be one and one half inches above the ball of the great toe, on which the patient must rest his weight. The flap grew to its new surroundings in two weeks, and by this time patient is beginning to walk in his Mikulicz boot.

The parts which I removed by the operation were exhibited at a meeting of the Chicago Medical Society. The specimen shows the following points: On the skin covering the calcaneum is seen a cicatrix about two inches long and between one-half inch to an inch wide; it curves around the heel from below upwards and backwards, half of it being situated inferiorly and half of it posteriorly. A sagittal section through the astragalus and os calcis presents a complete osseous ankylosis between the two bones, which are separated only by the sinus tarsi. On the tibial surface of the astragalus the cartilage has disappeared and a rough osseous surface is seen, which had been united with the tibia by osseous ankylosis. The bone is found to be in the same condition on the anterior surface of the head of the astragalus and on the anterior process of the os calcis. Osseous ankylosis here also existed (at the time of the operation) between these portions of the two bones and the scaphoid and cuboid bones respectively. The latter two bones, as I stated above, were partially removed with gouge and saw. The other piece of the specimen shows the malleoli united by a thin disc of the tibia, from which subsequently an additional disc was sawed off.

I furthermore called the attention of the Society to two plaster casts which had been taken of the foot after patient had recovered. The shortened foot is seen to be in the axis of the leg, in the position of an extreme pes equinus. The dorsum of this artificial pes equinus is slightly convex; the planta is flat and almost in direct continuation with the surface of the calf. In place of the internal malleolus a bony prominence has formed, which closely resembles the malleolus; it probably grew from the periosteum of the malleolus. The mass of soft parts which was left on the inner surface of the foot, has undergone almost complete atrophy. The superficial tissues lie almost as close to the bones as on the fibular side of the foot. The external malleolus is replaced by a small process of bone; about one inch posterior to this, and half an inch inferior to it, the tuberosity of the fifth metatarsal bone may be noticed.

The first and second toes are flexed on the dorsum of the foot almost to a right angle; the third and fourth toes are flexed in the same manner, but to a less degree. We must remember that the cast was taken while patient was lying in bed; when he is in the upright position the flexion of the toes exceeds that seen in the cast.

A solid osseous union has taken place between the cut surfaces of the bones. The foot still possesses some active and passive mobility in the remaining joints of the tarsus and in the joints between the tarsus and the metatarsal bones. This mobility, however, is so limited as not to impair the necessary stability of the foot. The toes move actively, the first, second and third toe through an angle of 25°; passively the great toe can be moved through an angle of 40°, and the second and third toes through one of 80°. The circumference of the walking surface of the foot, the toes included, is 10½ inches. Across the foot this surface is three inches wide, and from before backwards, beginning at the bases of the toes, it is 1½ inches. The active mobility of the toes gives a certain degree of elasticity to the gait. Measurements of the two extremities show that the limb operated upon has been lengthened by two inches. The measurements were made from the anterior superior spine of the ileum to the lowest point of the heel on the left, and to the ball of the great toe on the right side.

Indications for the Operation.—The operation is indicated in cases in which there is an extensive loss of substance or an intractable disease of the bones and skin of the heel. In Mikulicz's first case there was extensive destruction of the skin only. In four cases out of the nineteen cases published there existed tuberculous ulcers of the skin together with disease of either the calcaneum or astragalus. Of the remaining cases, in but one was the operation done for widespread destruction of bone with implication of one or more of the joints between the ankle and Chopart's articulation. In Ranke's case the bones and joints were sound, but a cicatricial contraction of the skin and malformation of the foot disabled the member.

Mikulicz enumerates the indications as follows: 1. Extensive injuries of the heel and the parts surrounding it. 2. Caries, *i. e.*, tuberculosis of the astragalus and os calcis with implication of a neighboring joint. 3. Extensive destructive ulceration of the skin on the heel.[3]

[3] Mikulicz. Zwei Falle von osteoplastischer Fuss-resectionnach eigener. Methode, 1883, pp. 36, 37. Centralbl. fur Chirurgie, No. 1, 1884, p. 12.

As to the first indication it is to be remarked that the operation, as far as we know, has not as yet been performed in a case of acute traumatic injury of the heel.

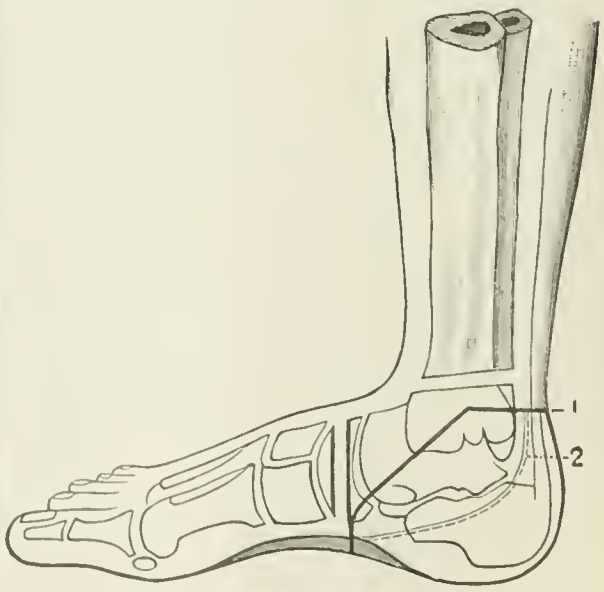
The second indication has most frequently led to the operation; it being present in thirteen out of the nineteen cases reported. As the skin of the heel was intact in these cases, the question arises whether it would not have been preferable to make an extensive atypical resection of the tarsus. The latter operation does not alter the position of the foot; it allows the patient to walk on the planta. Opinions differ in regard to this question. Most of the older writers, as Hueter, Koenig, Czerny and Billroth, advise against resection of the tarsus. Lately, however, Kappeler in Germany and Connor in America have taken up and, in able papers, revised the subject of resection of the tarsus; both come to the conclusion that a good functional result may be obtained after removal of the tarsus, even when the operation is combined with a resection of the ankle joint, *i. e.*, with a removal of the lower ends of the tibia and fibula. It may thus be doubted whether such cases as the thirteen mentioned call for Miculicz's operation, and whether his second indication is not better met by a partial, or even a total resection of the tarsus.

Miculicz's third indication is the only one which, as appears to me, must be indisputably accepted as good. Where there is extensive ulceration of the skin covering the heel, nothing but a cicatrix will form, and a cicatrix under the heel cannot bear the weight of the body, and will always ulcerate under the pressure it is subjected to in walking. As both Syme's and Pirogoff's operations require that the skin on the posterior flap be healthy, the osteoplastic resection of the foot is the only operation by which a supra-malleolar amputation can be avoided.

If, in the course of time, the osteoplastic resection of the foot should prove superior to excision of the tarsus, to Syme's and to Pirogoff's operations, in its functional results, the indications for the operation will be viewed in a different light.

Steps of the Operation—1. Incisions.— Miculicz made a transverse incision across the sole from the tuberosity of the scaphoid to a point a little behind the tuberosity of the fifth metatarsal bone. Schattauer cut one-fourth to three-fourths inch anterior to this, running his incision over the cuneiform and cuboid bones. From the ends of the transverse cut incisions were made on the tibial and fibular sides of the foot, upwards and backwards as far as the malleoli, between which two points the knife was carried around the ankle joint posteriorly. The tibial incision from the tuberosity of the scaphoid to the internal malleolus inevitably divides the posterior tibial artery, or rather its plantar branches. This leaves but the anterior tibial artery to supply the foot with blood. Miculicz, before he did his first operation, doubted that the blood-supply of the foot would be sufficient. He was, however, relieved of his anxiety when, after the removal of Esmarch's bandage, he saw the cut ends of the plantar arteries bleed freely. As I said above, I likewise feared for the safety of my patient's foot, in which there existed fistulous openings, hard induration, and infiltration of the soft tissues surrounding the anterior tibial artery. That such apprehension was well founded may be seen from Sordina's case, in which, four days after the operation, gangrene of the foot necessitated its amputation. It is, therefore, necessary to preserve some branches of the posterior tibial artery. This can be done by altering the incisions of the operation in the following manner:

Instead of cutting clear across the planta, the anterior transverse incision may be begun three-fourths inch external to the tibial border of the foot. The tibial incision may then be made from this point, not upwards to the internal malleolus, but almost horizontally backwards over the tibial surface of the os calcis, below the sustentaculum tali, to a point one inch posterior to the sustentaculum; then it may be continued upwards along the tibial border of the tendo Achillis to the posterior side of the ankle joint. By this incision we may hope to save the internal plantar artery, whose assistance in supplying the foot with blood seems essential. This low incision is somewhat inconvenient to the operator; he meets with greater difficulties in getting at the ankle joint and Chopart's articulation than he does when Miculicz's incision is made. This difficulty, however, is overcome partly by separating the soft parts subperiosteally from the calcaneum and astragalus with a periosteal elevator (flat gouge), partly by bringing the external or fibular incision more upward toward the dorsum of the foot, so as to have it terminate about one-fourth inch anterior to the external malleolus. This incision does not imperil the safety of the anterior tibial artery. The upper and lower transverse incisions will be about of the same lengths as they are when Miculicz's directions are followed; there will be sufficient working space to get at the joints.



1. Miculicz's line of incision. 2. My line of incision.

2. *Disarticulation.* — The disarticulation at the ankle had better be done first. Wladimiroff disarticulated first at Chopart's joint. By beginning at the ankle we gain more room for separating the dorsal flap, with the extensor tendons and anterior tibial artery, from the neck of the astragalus. Besides, disarticulation of Chopart's joint is more readily accomplished from above than from below, on account of the process of bone which, at the *posterior tibial* extremity, projects from the inferior surface of the cuboid under the neck of the calcaneum.

3. The step in the operation following disarticulation at the ankle joint, should be the *separation of the dorsal flap from the astragalus.* This should be done subperiosteally with a periosteal elevator. By keeping close to the bone, all injury to the anterior tibial artery and to the extensor tendons is avoidable. Preservation of the extensor tendons is of importance, because active mobility of the toes facilitates walking by rendering the gait more elastic.

4. Next, the ligaments of the calcaneo-cuboid and talo scaphoid articulations are cut through from above, and the heel is removed.

5. After this the malleoli, the articular surface of the tibia and the articular surfaces of the cuboid and scaphoid bones are taken off with a saw. If the cut surfaces should be found to be diseased, more of the bone must be removed. Miculicz (case 17) made *évidement* of the cuboid and scaphoid bones; Fischer (case 15) removed the cuboid and the second and third cuneiform bones. Kümmel, in one of his cases in which there was a relapse of the tuberculosis, was compelled to remove the remainder of the tarsal bones, part of the bases of the metatarsal bones and additional pieces of the tibia and fibula. In all of these cases the functional results were satisfactory.

In case the tuberculosis extends along the sheaths of the tendons, these should be scraped with the sharp spoon; or, better, the sheaths should be dissected out with scissors and forceps (Schattauer, case 14).

6. The cut surfaces of the cuboid and scaphoid are brought into apposition with the cut surfaces of the tibia and fibula. In order to prevent dislocation of the foot and to facilitate bony union, Haberern proposed suturing of the bones. Examining the specimen of Lümniczer's case, in which the foot was amputated five months after the operation, he had found the foot dislocated forwards and rotated outwards, and one-third only of the cut osseous surface in contact with each other. Sklifossoffsky united the bones with silk; Fischer with catgut; Kümmel used silk and a steel nail; in my case silver wire was employed.

That a solid osseous union may be obtained without bone suture is proved by one of Miculicz's cases (No. 7), where he made *évidement* of the cuboid and scaphoid and consequently had irregular osseous surfaces. Nevertheless, the bone suture or the nail must be regarded as valuable helps in holding the bones in exact apposition and in bringing about osseous union.

7. The soft parts are united and drainage is provided for in the usual manner. There is, however, in these cases, a peculiarity which must be mentioned. Where a considerable amount of bone is removed, the dorsal flap is so long that a large fold is formed when the foot is brought up to the tibia. A similar folding and bunching occurs at the tibial side of the wound in cases where the internal incision is made horizontally to save the posterior tibial artery, as in Sordina's case (No. 18), and in mine (No. 19). In order to prevent the formation of dead spaces in this abundant tissue and separation of the coapted bones in cases where no sutures are used, Miculicz employs deeply placed quilled sutures or Plattenvähte. These quilled sutures are undoubtedly of service in cases like Lauenstein's first case (No. 8), where he was obliged to go as high as 7 centimetres above the ankle. In ordinary cases, however, the terraced catgut suture, which is left in place for absorption, serves equally well; besides, it is less apt to interfere with the circulation than is the quilled suture. The superabundant tissue in the anterior flap gradually disappears; it atrophies from non-use.

8. Subcutaneous tenotomy of the flexor tendons of the sole was resorted to by Miculicz in order to facilitate the backward flexing of the toes. If, as in Fischer's case, the toes, before the operation, are sufficiently movable, tenotomy is, self-evidently, superfluous. In most of these cases, however, the toes will be found to be flexed and rigid, probably from non use. As such a foot requires that the toes be flexed dorsally at least to a right angle with the foot, an operation to obtain this position must be done, and it had better be done at once, as thereby time is saved and a secondary operation avoided.

It is doubtful whether, in cases of long standing like mine, tenotomy in the planta will prevent rupture of the skin, or even a fracture through the base of the first phalanx. The latter accident was due, probably, more to stiffness of the metatarso-phalangeal joint than to retraction of the tendon. In the next case which comes into my hands, I shall perform tenotomy and then either extend the toes at once, or, at a later date, after the wound has healed, try gradual, elastic extension. It is of importance to avoid rupture of the skin and fracture of a bone; not because this latter wound does not heal readily under antiseptic dressings, but because the cicatrix will be so situated as to be subject to greater pressure in walking than any other part of the walking surface. The cicatrix will ulcerate, and this will necessitate transplanting of skin from the planta, lest the foot be useless. Such an operation should, of course, be avoided.

9. Over a heavy antiseptic dressing extending from the toes beyond the knee, a light plaster cast should be applied. This should include the knee to insure perfect immobility of the foot. Posterior (Lauenstein, Fischer) and anterior (W. Reussen, Ranke) splints have been used for the same purpose. In cases where there is danger of gangrene, splints may be preferable during the first week, on account of the ease with which they are removed, for in such cases the foot should be inspected daily.

After-Treatment.—The foot is liable to be displaced in any direction, especially in cases where the bones are not held together by sutures. Miculicz says that such displacements can be corrected as late

as four or six weeks after the operation, and that they do not compromise the final result.

A far more serious occurrence, during the after-treatment, is a relapse of the tuberculosis, either in the bones or in the soft parts, but especially in the sheaths of the tendons. The tuberculous tissue must at once be removed. That an extensive secondary operation may be done and the final result still be good, is learned by Kümmel's case. Four months after a typical Miculicz operation, Kümmel took away the tarsus, part of the metatarsus, and additional pieces of the tibia and fibula. The wound healed by first intention. In five weeks his patient was able to walk in a plaster cast, and in five further weeks he walked in a shoe for four hours without suffering any pain. In Fischer's case the tuberculosis returned eight months after the operation. He removed what remained of the cuboid and the second and third cuneiform bones. His patient walked in a boot, with the aid of a cane, in six months. It is also stated that he could walk up and down stairs. The duration of the after-treatment in the different cases, from the time of the operation to the time when the patients began to walk, was as follows: In one (13), five weeks; one (17), seven weeks; three (2, 4, 9), two months; three (2, 7, 19), four months; three (12, 15, 16), six to seven months.

Prognosis and Results.—As yet there has been no death attributable to the operation. Two patients died of pulmonary tuberculosis, one six and one eight months after the operation (cases 4 and 8). Both of these patients had walked on the foot, and, consequently, the operation may be said to have been successful. Three of the operations published were failures, as amputation above the malleoli became necessary. In two of these cases the disease relapsed (6 and 14), and in one gangrene of the foot set in (17). The patients, however, did not die.

It is thus seen that the osteoplastic resection of the foot is not attended by greater danger than the other operations in this locality. As the nineteen operations published were done with antiseptic precautions, it would, of course, be rash to conlude that the mortality of Miculicz's operation is less than that of excision of the tarsus, or of Pirogoff's or Syme's operations. The statistics of the latter operation undoubtedly owe their death-rate to pre-antiseptic surgery.

It cannot be said that the final, functional result of the operation has, as yet, been well ascertained; most of the cases were published a relatively short time after recovery from the operation, and Fischer rightly remarks that we cannot judge of its value before we have a large number of cases before us. The object of the operation is to enable the patient to walk on his foot without any pain; to enable him to bear the whole weight of his body on the walking-surface. This object was accomplished to perfection in three cases (2, 3, 13), and fairly well in nine. In this respect the results of the operation are far superior to those of supramalleolar amputations. It is Fischer's opinion that Miculicz's operation gives better results than Pirogoff's, because after the former the walking surface is at least one-third larger than after the latter, and because the toes give a certain "elasticity" to the gait. Closer comparison of the results of the two operations is as yet needed to confirm the correctness of this opinion. Miculicz did not intend his operation to take the place of Pirogoff's or Syme's, although it seems that in some of the nineteen cases reported the question might have arisen whether excision of the tarsus, or Pirogoff's or Syme's operations were not respectively indicated.

From the facts which I have collected and stated above I think it is justifiable to draw the following conclusions:

1. The osteoplastic resection of the foot, as devised by Wladimiroff and Miculicz, has a legitimate place in the surgery of the foot. It gives functional results superior to those of supramalleolar amputation.

2. Destruction of the soft parts of the heel is an indisputable indication for its performance.

3. In tuberculosis of the ankle joint with tarsus atypical excisions may be done, as advised by Connor and Kappeler, or Pirogoff's or Syme's operations. It is doubtful whether these operations, in cases permitting the choice, should be abandoned in favor of the osteoplastic resection. This question can be answered only after further observations have been made as to the permanent cure of the disease by the operation, the duration of its after-treatment and its final functional results.

4. The results so far recorded allow of a choice between the osteoplastic resection and the operations mentioned, for the purpose of determining its value as compared with that of the older operations.

LITERATURE.

1. Miculicz; Eine neue osteoplastische Resectionsmethode am Fusse. Langenbeck's Archiv für klinische Chirurgie, Bd. xxvi, Hft. 2, p. 494, 1881.

2. G. Fischer; Zur osteoplastischen Resection des Fusses nach Wladimirow–Miculicz. Deutsche Zeitschrift für Chirurgie, bei Lücke und Rose, Bd. xxiii, p. 162, 1885.

3. Miculicz; Zur Prioritätsfrage der osteoplastischen Resection am Fusse. Langenbeck's Archiv, Bd. xxxiii, p. 220, 1886.

4. Wladimiroff; Einige neue osteoplastische Operationen an der unteren Extremität. Russian. Kasan, 1872. Vide 2 and 3.

5. Socin (Burchardt); Jahresbericht über die chirurgische Abtheilung des Spitals zu Basel, 1881–1882, p. 133. Vid. G. Fischer (2), Miculicz (6); Virchow-Hirsch Jahresbericht für 1883. Bd. ii. Abth. 2, p. 382.

6. Miculicz; Zwei Fälle von osteoplastischen Fussresection nach eigener Methode. Przeglad Lekarska, 1883, 36–38. Centralblatt für Chirurgie, No. 1, 1884, p. 12. Wiener Med. Wochenschrift, 1883, No. 50. Virchow–Hirsch Jahresb. fur 1883, Bd. iv, Abtheil 2, p. 382.

7. Sklifossoffsky; Bull. de la Société de Moscou, 1882. Vid. 2.

8. Haberern (Lümniczer); Verhandlungen der deutschen Gesellschaft für Chirurgie, xiii, 1884, p. 96. Beilage zum Centralblatt fur Chirurgie, 1884, No. 23, p. 87. Virchow-Hirsch Jahresb. für 1884, Bd. ii, Abth. 2, p. 386.

9. Lauenstein; Ueber die Verwendung der osteoplastischen Fussresection nach Miculicz bei Caries. Centralbl. für Chirurgie, 1884, No. 1, p. 25. Virchow–Hirsch Jahresb. für 1884, Bd. ii, Abth. 2, p. 385.

10. K. Roser; Berliner Klinische Wochenschrift, 1885. No. 19, p. 308. Aerztlicher Verein zu Marburg, August 6, 1884.

11. Kümmel; Beitrag zur osteoplastischen Fussresection. Centralbl. fur chir., 1885. No. 24 Beilage, p. 106.

12. Schattauer; Przeglad Lekarska, 1885. No. 15. Centralbl. fur Chir., 1885, No. 28, p. 503.

13. Ranke; Nederl. Tijdschr. v. Geneesekunde, 1884, No. 51.
Reussen; Centralbl. fur Chirurgie, 1885, No 15, p. 280.
14. Sordina; Rivista veneta di Scienze med., September, 1885. Centralbl fur Chirurgie, 1885, No. 3, p. 48.
15. Kappeler; Ueber grosse atypische Resectionen am Fusse. Deutsche Zeitschrift fur Chirurgie, Bd. xxx, p. 432, 1880.
16. Conner; Excision of the Tarsus. Transactions of the American Surgical Association, vol. i, p. 285.
17. Monastyrsky; Zur Steuer der Wahrheit, etc. St. Petersburger med. Wochenschrift, January 11 (23), 1886.

THE ETIOLOGY AND CURE OF ASTHMA.

Read before the Chicago Medical Society, January 3, 1887.

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The work of Wilhelm Hack on the radical treatment of migraine, asthma, hay fever and other neuroses, has received very inadequate recognition in this country. By writers on hay fever he is frequently quoted in an offhand manner together with a string of other authors; so that one derives the impression that few of those who quote him have read him. And if his specialistic colleagues do not do him justice, the large class of general practitioners ignore him almost altogether. His work is—taken altogether—of even greater interest to the physician than to the specialist, and it is a deplorable consequence of specialistic exclusiveness, that the results of his work have not yet received wider recognition among us. He teaches us that the rhinoscope must forthwith be as indispensable an instrument for all physicians as the thermometer and stethoscope.

The value of Hack's discovery, that asthma nervosum is a reflex disease with, usually, the nose as a starting-point, can best be appreciated by one who himself, for many years, struggled against the disease and fumed at the utter impotence of medical art to stave off the attacks. If I, therefore, in the course of this paper, class myself among my own patients, I shall do so with the view of bringing the subject within closer range. It is foreign to my subject to consider the isolated publications, from Voltolini downward, on the dependence of asthma upon polypous growths in the nose. Such cases are infrequent enough to be almost considered curiosities (Michel, for instance, reports 135 cases of polypus without asthma); and as Hack shows, polypi have rather a tendency to prevent asthma than to cause it. It will also simplify our subject, if we omit hay fever from our consideration.

The form of asthma of which I wish to treat exclusively is that perennial form which is more or less independent of the seasons, namely: asthma nervosum, or "Essentielles Asthma" of the Germans. Some persons never get beyond a slight hint of asthma. They will from time to time make a heaving, sighing motion, or complain of præcordial fulness with or without palpitation, or of sudden drowsiness, or dream heavily at night and complain of dulness, lassitude and headache in the morning. This latter condition has many gradations, the culmination of which is nightmare. In the future we must, therefore, learn to distinguish between an incubus of gastric and of respiratory origin. Other half-asthmatics complain only of a fleeting, leaden heaviness in the limbs amounting almost to pain; the same sensation of which so many true asthmatics complain after an asthmatic night. The typical asthma nervosum is known to us all as a neurosis occurring in paroxysms.

The patient may or may not feel an aura. He will generally, towards evening, or when he lies down, or awakes in the night, begin to wheeze. This wheezing may be associated with itching in the nose, or sneezing, or coughing; the attacks last an indefinite time, and generally end with the expectoration of a transparent glassy mucus. Such patients are often free from asthma during the day. Physical and chemical irritants, such as dust, sudden changes in temperature, the inhalation of certain gases, and a long series of idiosyncrasies which we find enumerated in text-books, can induce an attack. But the recumbent position is the most uniform exciting cause of the single paroxysms. Such patients may be free from chronic bronchitis, chronic emphysema, heart-, kidney-, intestinal- and uterine disease: hence the term "Essentielles Asthma."

When we read authors whose contributions to the study of asthma antedate the last few years, we are struck by the uniformity with which they cling to a pet theory, each of which seems to give satisfaction to its upholder. It is merely an evasion to say that asthmatic paroxysms are induced by bronchial spasms, or by hyperæmia of the bronchial lining, or by the presence of Leyden's crystals, or by phrenic spasm, or by bulbar irritation, or by exudative bronchiolitis. For any one of these presumable causes would demand a first cause, in order to merit etiological dignity.

A true etiology of asthma had therefore to be discovered, and Hack did it in the following manner: He knew, of course, of the occasional rôle of nasal neoplasms. Schäffer and B. Fränkel had also indicated that the sensibility of the nasal lining could be so heightened through chronic catarrhal conditions, as to be a starting point for reflex disturbances. Then Hack found that he could experimentally produce glottis-spasm by touching the turbinated bodies of a sensitive individual with a probe. He then reasoned as follows: A nasal mucous membrane which shows merely slight affection, and which is not deadened in its sensibility by thickening and hypertrophy, is perhaps a better surface for exciting reflexes than one which shows evident signs of disease. And if this were the case, he reasoned, then perhaps the importance of nasal reflexes had been formerly overlooked just because of the insignificant abnormities of such a sensitive nose.

The very frequency of certain conditions may have given rise to an under-estimation of their significance. And so Hack systematically examined the nose of every patient who, for whatever ailing, came within his reach. He learned to make one distinction very rapidly, namely: that what is usually termed hypertrophic nasal catarrh is a twofold condition, which in its effects is quite opposite. In the anatomically true rhinitis hypertrophica the mucous membrane is really thickened, hypertrophied through chronic inflammation. Pressure with a probe meets with a certain

unyielding resistance, and there is a purulent, crusty secretion. This form does *not* give rise to reflex disturbances.

But there is another form, a pseudo-hypertrophy, the importance of which it is Hack's merit to have pointed out. It is that transitory swelling of the cavernous tissue of the inferior and middle turbinated bodies, which has of late been so often described that I spare you a repetition. In this form the nose may either have a very dry, itchy sensation, or show copious watery secretion. Compression with a probe gives the air-pillow reaction. Such individuals show fleeting alternate or synchronous obstruction of the nasal cavities. Often, when examining the nose of patients, we notice sudden engorgements and collapse, so that Hack's term erectility is not an exaggeration. These cavernous bodies with their frequently anæmic covering form a link in certain morbid reflexes, and when this link is destroyed through operative intervention, the reflexes cease. No symptom is more frequently overlooked by patients than transitory nasal obstruction. Most patients will positively deny its existence, until it is demonstrated to them. Therefore the assurance of an asthmatic that his nose has always appeared healthy is of no value.

Other asthmatics, if conscious of nasal trouble, consider it simply concomitant with their asthma, and it is characteristic of them that they will often resist the inquiries of the physician who attaches so much importance to rhinoscopic examination and nasal symptoms, when all their trouble seems located in the chest. It is interesting to observe how such people become gradually convinced, and how uniformly they marvel at having forgotten or overlooked most constant symptoms. Only recently I succeeded in showing an asthmatic half a dozen rapid openings and closings within barely more than a minute or two.

The theory of Hack is a simple one, and although it does not cover all the ground, is a very satisfactory one. He says that the turbinated bodies become engorged through various irritants, and that this vasodilatatory disturbance is transmitted to the bronchial tubes in asthma. The turbinated bodies act as accumulators for reflexes, store them up, as it were, and then transmit them to other parts. A destruction of the nasal swelling removes the reflexes. The experiences of numerous writers since 1883 corroborate the correctness of Hack's discovery.

By way of illustration I could not, I believe, select a better type of asthma of long standing than that of my own person. Twenty years ago, when I was 8 years of age, I became subject to so called colds in the head and on the chest. They increased in severity and frequency from year to year, so that my surroundings were often puzzled to find an explanation for each outbreak. Presently nightly dyspnœa began to set in, in the following manner: During the day my respiration was quite free, but as soon as my head touched the pillow, the first wheeze set in; the paroxysms were very severe. They ceased, after lasting throughout the night, in the morning, with the usual expectoration of glassy mucus.

During the day there was never any difficulty, except when occasioned by laughter. Laughter would infallibly cause itching under the chin and between the scapulæ, then I would cough convulsively and the attack was upon me. But the recumbent position was the surest exciting cause. During the first years I also suffered from that form of conjunctivitis which is now known to arise from nasal disorder.

I must give Dr. Abram Jacobi, of New York, under whose treatment I was at the time, credit for having already then, even without the use of the nasal speculum, laid stress upon a nasal trouble. But the aggravation of my troubles which followed upon the introduction of weak nitrate of silver solutions into my nose, made the memory of him a less pleasant one in those years than it is at present. The greater part of 1870 to 1875 I spent in the Swiss mountains, where I was entirely well. The attacks ceased from the day on which I reached the mountains, and infallibly returned on the very day I left them. Once during harvest season in Bavaria (1872), while I sat in a meadow, I was suddenly overtaken with convulsive sneezing, coughing and asthma. It lasted hours before I could reach the neighboring village. During that same period I developed a peculiar idiosyncrasy towards dinner. In the midst of the meal I would invariably for weeks be seized with a convulsive cough, so severe that it threw me to the ground. Asthma was never absent in these attacks. Then, at other times, one or two or three sneezes would initiate an asthmatic attack; or sometimes, especially after traveling, I would sneeze sixty or seventy times without intermission. In those years I had the sensation as if the asthma were brought on by a swelling, which seemed to begin above and behind the palate (it was associated with intense itching, which I attempted to relieve by rubbing my tongue against the hard palate), and traveled downward to the posterior pharynx, then seemed to skip the larynx and continued from the trachea downward. This phenomenon lasted a few seconds, and then the attack began. Railroad travel would invariably cause a night of asthma. One hotel, at which I was frequently obliged to stop in Germany, adjoined a stable, and was regularly the cause of some of the severest attacks.

The few years which antedated my acquaintance with Hack's writings were comparatively easy ones, because the inhalation of Kidder's asthma pastilles —the only palliative I ever used successfully—gave me very great relief. They not only immediately terminated an attack, but also prevented their occurrence for the next hours.

As soon as I became acquainted with Hack's articles in the *Berliner klin. Wochenschrift*, of 1882, and with his monograph in 1883, I commenced stricter self-observation, and found the following:

As soon as I lay down my nose would become obstructed. The occlusion corresponded to the side on which I lay. By turning over, the occluded side would open and the other close. To have any part of the nasal mucous membrane touched by a probe gave such intense pain that I could not suppress an outcry. I could bring on an attack of asthma by rubbing my ala nasi against the septum.

Never did I feel the slightest dyspnœa when nasal respiration was free, and never was nasal respiration obstructed but what I felt asthmatic distress.

Under these circumstances there could be no hesitation; Dr. Jefferson Bettman (now of New York) and Dr. Henry Gradle, performed the galvano caustic "destruction" of both inferior turbinated swellings. When I say galvano caustic "destruction," I should like to put the word destruction in quotation marks; for I have found the radical obliteration of the entire inferior turbinated bodies almost an impossibility. Hack demands, and my experience confirms the correctness of his view, that the radical cure of asthma demands the radical destruction of the cavernous erection. But a longer and closer observation of such patients in whom the extirpation seems complete will almost invariably show relapses, which must again be subjected to operative interference.

In my own case fourteen cauterizations, performed with both a flat and furrow electrode in the manner described by Hack, have not succeeded in permanently clearing the nose. The asthmatic attacks have, to my unspeakable relief, ceased. Sleep is now a function of which I have lost all dread. But during the daily occurring fleeting occlusions, there is a feeling of heaviness on the chest and of excessive fatigue in the limbs, which do not pass away until the nose is free.

What is it that causes nasal occlusion? I have observed myself so closely in this regard, and have so many corroborative observations of intelligent patients, that I can make these positive statements:

Firstly, the fullness of the turbinated bodies is regularly influenced by gravitation, and corresponds to the position of the head.

It is furthermore influenced by the temperature, and probably much more so by artificial warmth than cold; an over-heated room will almost invariably cause swelling in such patients. But the most dangerous and permanent cause of nasal obstruction is the inhalation of dust.

The time is, I hope, not far distant when our views on the etiology of respiratory diseases will undergo a radical change. The superstition of catching cold has lived too long. The light which mycological research has thrown on the etiology of most infective diseases must soon influence us toward a conviction that respiratory diseases are *inhaled*, not caught, and that suppuration in the respiratory tract is as impossible without the presence of micro-organisms, as it is on a wound. The superstition of "catching cold" is so pernicious because it diverts attention from the entrance-way of disease-generators. It is as impossible to contract an acute bronchitis through temperature influences alone, as it is to contract tuberculosis through a cold.

It is therefore of the utmost importance to warn asthmatics that as perfect an avoidance of dust inhalation as is possible in our contaminated surroundings is necessary to prevent a recurrence of their trouble. Not only the dust in the streets, but also that in our houses, is to be avoided as much as possible. Carpets and curtains are great receptacles of dust; and a strict regulation of street sprinkling will in the course of years, when the true etiology of respiratory diseases will have been recognized, be considered as important a municipal regulation as the regulation of sewerage.

When are we to operate on asthmatics? The more recent the asthmatic trouble and the more pronounced the nasal symptoms, the better the prognosis. When complicated with chronic bronchitis and chronic emphysema, the outlook is generally bad. A most thorough examination of heart, lungs, kidneys and intestines should precede any operative interference. In cases of cardiac and nephritic asthma with nasal complications, I have *never* cauterized. Firstly, because it has seemed to me irrational; and secondly, because I feel so much gratitude towards Hack's discovery, that I shun any risk which might discredit it.

In some cases it is very difficult to decide whether an operation should be performed or not. For instance, in cases of long standing, say fifteen or twenty years, in which in the first years the nasal symptoms were very pronounced, but in later years have almost or entirely disappeared, in such cases cauterization is sometimes successful, but generally it is unsuccessful.

Cases in which the asthma is more or less constant and has lost its paroxysmal nature, give a doubtful prognosis. It has been a matter of experience with me, that those patients to whom the inhalation of Kidder's pastilles, or the application of cocaine to the nose (four per cent. solution on cotton), gives relief, afford a much better prognosis than others.

In asthmatics in which coughing precedes the attack and all nasal symptoms are missing, nasal cauterization will cure, if the cough is a so-called nasal cough.

There are a number of asthmatics, fortunately a minority, who seemingly offer a good prognosis, but with whom, for unknown reasons, the operation will fail. There can now be no doubt that there are other starting points for reflexes in the respiratory tract, besides the nose. The works of Trautmann and Tornwaldt have already added the vault of the pharynx to this list.

The bronchial tubes themselves can act as a starting point, as I can demonstrate on myself when I walk against a piercing wind, or inhale vapors of sulphurous acid with my nose plugged. So that, as Hack himself warningly says, we must not over-estimate the applicability of his discovery.

We must accuse the nose *per exclusionem*. Examine every patient thoroughly in every direction, and examine the nose *last*, is what I should like to advise.

About the operation itself, little is to be said. It is, as far as we know, absolutely harmless. I have performed many hundred cauterizations without any noteworthy complications. I have never had any traumatic infection. I insufflate iodoform or iodol upon the wound, introduce a pledget of cotton for a a few days, and keep my instruments aseptic.

The results are, on the whole, extremely gratifying. Asthma of many years' standing is sometimes broken after the very first cauterization. Almost all patients are relieved and many cured in the strict

sense of the word. Some have relapses, which additional cauterization will remove. Others again may relapse with a new reflex sensitiveness in other parts.

But on the whole the subject, still so new, still so capable of growth, broadening and development, is one of the most pleasing contributions to medical knowledge, and the name of Hack will be, I am sure, not soon forgotten.

A CASE OF ANTE-PARTUM HÆMORRHAGE AT TERM. RECOVERY.

Read before the Chicago Medical Society, January 3, 1887.

BY AUGUSTUS V. PARK, M.D.,
OF CHICAGO,
MEMBER OF THE AMERICAN MEDICAL ASSOCIATON, ETC.

On the morning of August 5, 1886, I was called to see Mrs. S., age 37 years, a large and powerfully-built American-born Irish woman, cultured and intelligent for one in her station of life; she gave me this history:

This was her ninth confinement, she had also suffered six miscarriages. Professor Daniel T. Nelson, her family physician, was compelled to use instruments on one occasion; the child was large and healthy and she made a good recovery; she had received no falls or injuries since carrying this child, to her knowledge. There was no history or evidence of specific disease. Before I finished questioning she remembered a few evenings since of running against some obstruction in the back-yard; this gave her a slight shock just at the time, but she paid no attention to it. The evening previous to my call, just as she had retired for the night, she said she was taken with a severe hæmorrhage which lasted for some time, and the amount of blood frightened her, and she called in a physician. The hæmorrhage soon stopped and her pains were nothing to speak of. There had been some propulsive efforts throughout the night, and in the morning they were simply teasing and prevented her from securing any rest. She suffered no real or hard labor pains and not a particle of hæmorrhage during the night.

I made a careful examination of the bedding and of the soiled clothing which had been removed the evening before, and found them wet and heavy and blood-stained, but was unable to find clots of arterial blood or any evidence of a severe or continued uterine hæmorrhage. The pulse was regular, the volume and strength good, respiration and temperature normal; vaginal examination revealed a rigid os uteri and situated high in the pelvis, and directed backward so it pointed toward the cavity of the sacrum; the os uteri in this situation would have escaped any ordinary examination; there was no dilatation. I was satisfied that the pains were not true labor pains and I gave tinctura opii deodarata in fifteen minim doses, and to repeat in an hour or two if necessary.

3 P.M.—I was sent for in great haste, and upon my arrival found that there had been expulsive efforts during the past hour, but she was again quite easy and free from severe pain. I again examined the os and found it more soft and was enabled to insinuate my index finger, and by careful pressure with my left hand over the fundus uteri I could distinguish the head presenting. To satisfy myself as to the true character of the pains I remained at the bedside; the pains were irregular, sometimes severe, again they would be but slight. I examined the condition of the os uteri during the period of the pain, and found that the pains had no effect upon the cervix which remained undilated and flaccid, and the membranes did not become prominent or tense. The bowels had moved early in the day and a light meal taken at 12 M. Advised the continuance of the anodyne at once and again in two hours. This would control the severity of the pains and would lessen the rigidity of the os.

11 P.M.—Found the patient suffering true labor pains, pain in the back, the os soft and dilated to the size of a twenty-five cent piece; the head at the brim of the pelvis; the edges of the os thinned; the cervix rigid with each pain; there was no bag of water to act as a cushion. 12, 1 and 2 o'clock the labor was much the same, and was what would be termed a tedious labor; the liquor amnii having all escaped with the so-called hæmorrhage and each expulsive effort accomplished but little.

2:30 A.M.—The pains are more regular, the patient is warm and perspiring; the face is flushed and the carotids stand out round and full with each parturient effort; everything seemed favorable for an early termination of labor. Soon I noticed that the pains were not as propulsive, yet they were equally as painful; complained of great thirst, constantly calling for water; she became uneasy and restless, the face losing its ruddy color and the lips bleached; the pulse feeble, rapid and easily compressible. For the first time in nearly four years of active obstetric practice I was brought to the full realization of the great danger of concealed or ante-partum hæmorrhage. There was but one thing to be thought of, and that was to deliver at once and in the shortest time practicable. I placed the patient across the bed, the head and shoulders without bolsters, the nates drawn forward over the edge of the bed, the knees well flexed and held by assistants. With the first pain I ruptured the membranes; this was followed with a gush of blood, a small amount however. I applied the forceps; the head was at the superior straight, and with the second pain I made gentle and careful traction, observing the well-known law which governs the obstetricians in the high forceps operation, and delivered a still born child which bore all the evidences of having been dead at least six hours; gave child to the nurse and applied my left hand over the fundus uteri and made gentle pressure; soon the uterus commenced to contract and expel its contents; the blood and blood-clots that were thus forced out filled a common wash basin. The placenta was high up and normally situated on the posterior wall; with my left hand still on the fundus I experienced no trouble in reaching and removing the placenta; with this accomplished, all hæmorrhage ceased, ergot was given and gentle

pressure continued over the fundus uteri for a short period, stimulants given and patient made as comfortable as possible; pulse 140 to 145, weak and compressible, thirst continued for a few hours.

Complicating this case we had hæmorrhoids with prolapse of rectum and during the real labor pains it was nearly impossible to retain the hæmorrhoids within the sphincters; after delivery they were cleansed and returned with the replaced bowel within the sphincters and retained with a T bandage and compress; suppositories of opium and tanic acid gave quick relief. Patient made a rapid and easy recovery; was sitting up on the tenth day after confinement.

From all the phenomena observed I believe that the hæmorrhage was caused from a partial separation of a normally situated placenta. I also believe that the head of the child acted very like a ball valve and prevented the escape of the blood externally. I further believe that the blood or a portion of it found its way within the amniotic cavity, this would account for the amniotic fluid being colored with blood, also for the slight hæmorrhage that followed the mechanical rupture of the membranes previous to delivery. There must have been a rupture of the membranes high up and out of reach that allowed the escape of all the liquor amnii, for the membranes were intact, at least those presenting as far as they could be reached by a digital examination previous to delivery.

From statistics published by Churchill I find that out of 218 cases of accidental hæmorrhage thirty-two proved fatal, or one in six.[1]

I quote from Lusk's third and last edition:[2] "The circumstances under which concealed hæmorrhage takes place are given by Goodell[3] as follows: (a) When the placenta is centrally detached and the blood accumulates in the cul-de sac formed by the firm adhesion of its margins to the uterine wall. (b) When the placenta is so detached that the blood escapes into the uterine cavity behind the membranes near the fundus. (c) When membranes are ruptured near the detached placenta and the effused blood mingles with the liquor amnii. (d) When the presented part of the fœtus so accurately plugs up the maternal outlet that no existing hæmorrhage can escape externally. I have had a case where after labor I removed at least a basinful of firm clots from the uterine cavity, and yet both mother and child survived. In my own case to which I have referred, the Barnes dilator acted capitally, not only enabling me to expand the cervix, but exciting the uterus to contract vigorously.

"The serious symptoms set in after the membranes were ruptured and compelled me to deliver with forceps. In another case I should certainly first dilate, and, after rupture of the membranes should chose version and speedy extraction, and should avail myself of a skilled assistant, whose duty it should be to compress the uterine walls externally during the act of delivery.

"In case of internal hæmorrhage occurring during the progress of the labor the treatment will depend upon the stage of the labor and the amount of blood lost, judging by its effect. If the patient be in danger of sinking, and the os uteri dilatable but the head within the uterus, there can be no doubt that we must deliver by turning; but if the loss be moderate we may perhaps afford to wait until the head descends into the cavity of the pelvis, and in all cases where it is within reach of the forceps they should be used for immediate delivery, if the case be mechanically suitable. But little hesitation need be felt on account of the child in deciding upon the mode of delivery as it is lost in almost every case of extreme hæmorrhage.[4]"

We know from experience that a diagnosis of this condition is not easily made, yet the symptoms are so evident that one can only think of an internal hæmorrhage. The prognosis for the child is very bad, because, as a rule, it dies unless delivery be very speedily accomplished by nature or by art. For the mother the prognosis also is unfavorable and much more so than in placenta prævia.[5]

No. 411 26th Street.

[1] Churchill's System of Midwifery, p. 454.
[2] Lusk, Science and Art of Midwifery, p. 599–600.
[3] Goodell, on "Concealed Accidental Hæmorrhage of the Gravid Uterus," (Am. Jour. of Obstet., Aug., 1886, p. 281.) This paper serves as a mine from which most subsequent writers have drawn their data.

[4] Churchill's System of Midwifery, p. 454.
[5] Schroeder, Manual of Midwifery, p. 308.

MEDICAL PROGRESS.

A Practical Hint for Tracheotomy.—Mr. W. Leonard Braddon says: The operator is usually recommended, standing preferably on the right side of his patient, after first determining the exact relation of parts, to fix the trachea with the left hand, the fingers on one side and the thumb on the other, at the same time stretching the skin at the site of incision. The direction is at least distinct, but the manipulation is usually in effect very different. In all of many cases which I call to mind, there has been a little (the only) trouble in the operation, and in some, considerable danger, delay, or anxiety, consequent upon the way in which the attempt is made to keep the windpipe steady, as customarily taught and performed: Four fingers on the left side and the thumb upon the right side of the larynx, press with more or less force immediately backwards to hold the organ in place, with the effect of considerably aggravating the dyspnœa (especially if an anæsthetic is not being employed), of flattening the pipe against the vertebral column to some extent, of in all cases increasing the depth at which the part to be incised can be reached, and frequently of failing to secure fixity of the larynx, which, likely to move with the slightest change of pressure, is pushed still more out of reach by the increased pressure made to secure it. Any or all of this inconvenience is the result of pressing backwards with the fingers placed upon the skin immediately on either side of the windpipe.

The suggestion I have to make, and which, I have

no doubt, many surgeons have long ago thought of or adopted, although hitherto I have never seen it noticed, is so simple as to provoke a doubt as to its value, but any one who tries it will, I think, find it so effectual in practice as to have no more doubt than I have as to its advantage. Let the surgeon place his left hand, as widely expanded as possible, over the neck of a child in the position for tracheotomy; then resting the fingers upon one and the thumb upon the other side firmly upon the skin, as far to the side of the neck as they will reach, gradually draw in the thumb and fingers, and the skin (and loose tissue underneath) with them, towards the median line; as the sides of the windpipe are approached, a little more pressure, made in a backward direction, will place the ends of thumb and fingers in a position in which they almost meet behind the larynx, which is thus firmly held by the encircling hand in a position in which all the great blood vessels, etc. (which *have* been wounded) and the vertebral bodies (which, it is recorded, have *blunted a knife-point*) are far out of harm's way, the windpipe itself starting forward and standing out prominently under the skin, which is yet fairly stretched (and can be stretched more tightly) over the site of incision, and lying both as superficially as could be desired and as perfectly under control as possible. Lastly, and this I think is not altogether unimportant, this procedure may be adopted without producing more than the very slightest degree of discomfort in any ordinary child—the younger the more easily; and one is still able to make the skin as tight as possible; now, however, the necessary pressure is distributed all round, instead of acting directly backwards upon the tube so as to flatten or displace it. I have even been able without much trouble to make the thumb and fingers feel each other behind it by this means; while by the older method I have seen the production of undoubtedly a dangerous increase of dyspnœa. I may have overrated the danger, or underrated the utility of the usual method of fixation, but it has always seemed to me to be the only difficulty in an operation, which of course has none for experienced surgeons, but to others presents often some trouble, chiefly in consequence of the fact that the means adopted for fixing the part to be incised, being ill-devised though time-honored, are not only not to be relied on to secure that end, but, as I have tried to show, they directly tend to increase the depth of the wound of the trachea from the surface and the distress of the patient; and in all the accidents I have read of, and some that I have witnessed, this method has shown itself marked sometimes by danger, often by inutility. As to the barbarity of the *hook*, is it not an insult to the fingers of the surgeon?—*The Lancet*, November 20, 1886.

NEW POSITION FOR OPHTHALMIC OPERATIONS.—MR. G. M. GILES, Indian Medical Service, says: The supine position is, as most must have felt, by no means a convenient one for eye-operations. It is, however, the only practicable one when chloroform is used as an anæsthetic. The discovery, however, of a local anæsthetic, in the shape of cocaine, leaves us free to adopt any position that may be found most convenient for patient and operator.

For the last fifteen months I have been employed with an exploring party in the regions lying beyond our North West Indian frontier. Transport difficulties have rendered it necessary for us to fly very light. Hence, as may be well imagined, an operating couch formed no part of my equipment. A good deal of surgery of all sorts came to my hands, much of it ophthalmic, and I was often at a loss how to improvise a couch of some sort. Not unfrequently even the low country bedstead was unobtainable, so that one had to operate on the ground. Now, even to operate on a low bed is most difficult in ophthalmic cases, the surgeon's position being so constrained that all steadiness of hand is lost. Hence, after adopting cocaine, which I came to do very early in our travels, I began to try various positions with the view of finding one suitable to the peculiar exigencies of camp life, and finally hit upon the following position, which has been found so entirely convenient that I feel sure it is well worth a trial, not only by such as have to operate under difficulties, but even as a position of election.

The operator sits on an ordinary chair, with the knees well separated so that the patient may be able to sit on the ground between his feet. The position of the latter varies according to the nature of the operation and the side operated on. In ordinary cases, such as iridectomy, removal of pterygia, etc., he is seated with his back nearly to the operator, but with the face turned slightly to the left for the left eye, or to the right for the right. Seated thus, between the operator's feet, he throws back the head so that the occiput rests firmly on the surgeon's thigh; the left thigh in operations on the right eye, and *vice versâ*. This position answers equally well for cataract-extractions on the right side. For left cataract, however, unless the operator actually prefers to use the left hand, the following modification is necessary. Seated as before on the ground, between the operator's feet, he faces quite to the surgeon's left, then throwing back his head, and turning it slightly so that the chin points to the surgeon's hip-joint, he rests the occiput firmly on the operator's right knee. With the patient in this posture, it will be found perfectly easy to operate with the right hand.

The method is, no doubt, specially suited for dealing with Orientals, who are accustomed to sit on the ground; but for the limited time required for an operation, I do not think it will be found too constrained for Europeans. Primitive as it may seem, I feel sure that any one who will give it a fair trial will find the position much more convenient than either an ordinary operating couch or a dental chair. —*British Medical Journal*, Dec. 11, 1886.

FORMIC ACID AS A DISINFECTANT.—DR. VOITOFF, who has made a number of experiments on cultures of pyogenic microörganisms, says that formic acid is a specific against their success, and so may be considered as an excellent disinfectant.

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PROPHYLACTIC MIDWIFERY.

There still seems to be some who do not recognize the difference between a "Lister dressing" and "Listerian principles." It does not seem sufficient to say that the dressings may change but the principles cannot, as this has been repeatedly pointed out during the past four years, or more. Nor does it seem sufficient to say that all the principles of aseptic and antiseptic surgery and medicine are comprehended in the one word "cleanliness," as this has been repeatedly done, even by Sir Joseph Lister himself. Again, there are many who, seemingly, cannot understand the value of circumstantial evidence in medicine; they insist upon proof—absolute and incontrovertible, and question the pathogenic influence of dirt and germs in much the same way that the Rev. John Jasper disputes the movement of the earth about the sun. Those who, without any special knowledge of bacteriology and the etiology of disease, insist upon writing papers ridiculing more recent methods of investigation and the principles of antisepsis, should first learn that "antisepsis" is not synonymous with carbolic acid, with iodoform, corrosive sublimate, or any drug or drugs; that Listerian *principles* may be strictly adhered to without the use of drugs.

In the *Transactions* of the Medical Association of Georgia, for 1886, is a paper entitled "A Review of Modern Antiseptic Midwifery," by Dr. Eugene Foster, of Augusta, who attempts to "demonstrate that the antiseptic system is founded upon speculation pure and simple; and, furthermore, that this antiseptic system, as a routine practice, is, in its essential features, unscientific, unsuccessful, unnecessary and frequently harmful to the lying-in woman." And "the facts upon which the argument is based are taken almost exclusively from writers who are, or have been, advocates of the antiseptic system." In opening the argument on this question he first proposes to consider the theories as to the essential nature of puerperal fever, each one of which, he says, "is a matter of unadulterated guess-work." He does not discuss the question from the stand-point of labor in hospitals, but in private homes; for he says: "There is no analogy whatever between puerperal fever in private practice and hospital experience as to the modes of infection and the necessity of prophylaxis." If this be true, why apply hospital statistics to those of private practice? Why reason in private practice from hospital experience? If filth can cause disease in a hospital it can do the same thing in a private house; if it cannot cause disease in a hospital it cannot in private practice. If, as Dr. Foster says, labor is a purely physiological process, it is as much so in private practice as in a hospital, and *vice versâ*. It need not be said that private homes are in better sanitary condition than hospitals; for if antiseptic principles be unscientific then filth has nothing to do with the matter. If there be no analogy between puerperal fever in hospitals and that in private practice there can be none between amputations, compound fractures, typhoid fever or any other disease or affection in the two places. But to refuse to admit hospital statistics in this question practically shuts out argument, and reduces the whole matter to one of (simple individual opinions). However, the author of the paper under consideration does "not shrink from the task of attempting to demonstrate that even in hospitals the antiseptic methods have been unsuccessful"

Before witnessing this attempt it may be well to ask, why, in enumerating and commenting upon the theories of puerperal fever Dr. Foster, after quoting the masterly work of Lusk, should have wholly ignored his consideration of the "Nature of Puerperal Fever as regarded from the Standpoint of modern Investigation?" He gives what he calls Semmelweis's theory, Fordyce Barker's theory, Pasteur's theory, and Dr. Kinkead's theory of puerperal fever; but singularly enough he omits any mention of the facts contained in Lusk's work (Edition 1885, pp. 654–668), in which all the evidence in the case has been most carefully, and in a most masterly manner, collected and interpreted. Dr. Foster claims "distinctly that in epidemics of puerperal fever there are occult epidemic constituents of atmosphere, either local or general, which produce these epidemics in

recurring cycles." Where do these "occult constituents of atmosphere" come from; who has seen them; have they been isolated, cultivated, injected into mice and produced symptoms and lesions identical with those of the original disease? If not, we may as well attribute puerperal fever to volcanic eruptions or a shower of meteors.

The attempt to prove "that even in hospitals the antiseptic methods have been unsuccessful" may be attributed to a confusion of terms; to the idea that antisepsis, or asepsis, consists in carbolic sprays and injections of solutions of certain disinfectants or germicides. Where asepsis is complete antisepsis is unnecessary. Obstetricians will no doubt be surprised to learn that the author takes the statistics of the Rotunda Hospital and the Vienna Maternity to prove that antiseptic methods are unsuccessful; but, on investigation, it is found that he does not recognize that absolute cleanliness is *the* great antiseptic precaution. He does not mention the fact that the Rotunda Hospital is one of the best ventilated hospitals in the world; nor does he seem to realize that good ventilation is an antiseptic precaution. He declares that antisepsis has had nothing to do with the good results at the Preston Retreat, under Dr. Goodell, and then quotes Dr. Goodell: "I am governed by four golden rules—cleanliness, ventilation, rotation, and isolation!" Are not these antiseptic precautions? As against antiseptic principles he quotes *some* statistics from the New York Maternity Hospital (from 1875 to 1882, inclusive). He then says that in the autumn of 1883 Dr. Garrigues overhauled the Maternity, and instituted new antiseptic measures (which may be found in Lusk's Midwifery, p. 689, footnote); but he does not tell us that "in the following 162 confinements there were no deaths, and from October to July inclusive, of 409 patients confined, though many operations were performed, five died; but of these, only three were from septic causes, and they, Dr. Garrigues believes, were the results of the neglect of certain of the prescribed details." Lusk says (p. 693): "The great improvement in the condition of maternity patients in recent years has been due to the application of Lister's antiseptic principles in obstetric practice." He does not say that it has been due to vaginal injections, to carbolic acid, to corrosive sublimate, cheese-cloth, or iodoform, or to the application of Lister's *details*, but of his *principles*. Certainly it is no argument to quote statistics of a hospital which used details and neglected first principles, as does Dr. Foster in the case of the Philadelphia Hospital.

Obstetricians are familiar with the paper relating to this subject read by Dr. T. Gaillard Thomas before the New York Academy of Medicine about three years ago. This paper was admired and criticised by the leading obstetricians of the country at the time; and Dr. Foster now takes up the rules therein laid down *seriatim*. He ridicules the proposition to disinfect the lying-in room before labor, for the remarkable reason that if there are any germs they must have come from the atmosphere, and that it is impossible to disinfect the atmosphere of an occupied room. With regard to the rule that nurses and physicians should take care that all their clothing is free from exposure to the effluvia of septic infection, such as typhus fever, erysipelas, etc., Dr. Foster says: "To this rule I have no objection, so far as it is intended to protect the lying-in woman from zymotic diseases. If, however, it is intended to contend or intimate that the poisons of scarlet fever, measles, variola, etc., can produce puerperal fever, I most unhesitatingly deny the proposition." So far as the woman is concerned it is perhaps immaterial with her whether she die of puerperal fever or scarlet fever; and the fact (if it be a fact) that scarlet fever cannot produce puerperal septicæmia is no argument against antiseptic precautions and principles. The rule which prescribes that the physician should wash his hands in soap and water and scrape the nails, and afterwards use a solution of bichloride of mercury, is criticised by quoting the experiments of Förster, which showed that solutions of carbolic acid, boracic acid, zinc and iron chlorides do not sterilize the hands; but in the same paragraph he quotes Förster to the effect that the hands *were sterilized* by the use of a solution of corrosive sublimate of 1–1000 (the solution recommended by Thomas).

It is needless to follow this paper to its conclusion. Had the author used the word *details* instead of "system," "methods," and "principles," his paper would not present such a prominent mark for legitimate adverse criticism. Many good obstetricians, and many good surgeons, may be found who do not follow the minute details of antisepsis as laid down by others, because they think they are unnecessary; but those who have given the *principles* intelligent study and thought both believe and act upon them. Furthermore, while all the intelligence of the profession is not centred in those members who have hospital positions, it only needs a moment's reflection to see that such men have the advantage of others in experience. Intelligence without opportunity will not show the usefulness or worthlessness of principles or details. The fact that an Indian woman

who is confined by the side of a purling brook at the foot of Mt. Hood, does not have puerperal fever is insufficient proof that a woman confined in the Vienna Maternity can not have it; nor does the fact that a woman may be injured by repeated vaginal injections show that she cannot possibly contract puerperal fever when confined in a filthy room, attended by a careless physician. Among other honored members of the profession Sir Joseph Lister comes in for a large share of Dr. Foster's ridicule. Lister's contribution to medicine does not lie in the fact that he invented a spray for throwing carbolic acid vapor; not in the fact that he once used cheesecloth; that he made a metallic case for keeping surgical needles in carbolized oil—but in his system, his principles, of antiseptic surgery; which principles, not details, have been successfully applied to midwifery. The truth of principles is not proved by any one set of details; but Lister's principles have been shown to be true because they hold good under any and all details in which the principles are adhered to. Even the once hated and despised, but now honored Semmelweis comes in for a share of the ridicule which Dr. Foster attempts to heap upon members of the profession who have worked, and are now working for the good of humanity.

INTERNATIONAL COLLECTIVE INVESTIGATION OF DISEASE.

During the session of the Eighth International Medical Congress in Copenhagen, 1884, an International Collective Investigation Committee was organized, composed of representatives of Sweden, Norway, Denmark, Finland, Russia, Germany, Austria-Hungary, Switzerland, France, Great Britain, India, the United States, and South America. The two representatives on the Committee for the United States were Professors A. Jacobi, of New York, and N. S. Davis, of Chicago. Under the personal supervision of Prof. Jacobi a large number of the blanks for making returns adopted by the International Committee were printed in a neat and convenient form, and distributed to members of the profession in different parts of this country. Those receiving them were requested to fill up the blanks in due form with such cases of the several diseases as should come under their observation, and return the same to Professor Jacobi, on or before the 1st of January, 1887. A few weeks since he gave notice, through the medical journals, that he had resigned his position on the Committee, and requested those interested to make their returns to the other American member of the Committee, N. S. Davis, M.D., 65 Randolph street, Chicago. As it is very desirable to derive as much benefit from the expense and time already bestowed in printing and distributing the collective investigation blanks, and equally desirable that the work in this country should not prove a failure, we wish to add to the request of Prof. Jacobi by urging that all those who have blanks with recorded memoranda would return them as promptly as possible to the address already given above.

PRESENTATION TO DR. N. S. DAVIS.

On Thursday, January 20, the fiftieth anniversary of the entrance of Dr. N. S. Davis into the medical profession, he was presented by the students of the Chicago Medical College with a magnificent arm chair and a valuable and beautiful revolving set of reference shelves. The presentation was made by Professor W. W. Jaggard, in behalf of the students, and Dr. Davis responded in a most graceful manner. It has been but a few weeks since Dr. Davis's seventieth birthday was celebrated at his house by a large number of his friends.

It is peculiarly fitting that the students of the College of which Dr. Davis is practically the founder, the College which represents the principles of higher medical education for which he did so much before its foundation, and has done so much since, should have taken some note of his fiftieth birthday into the profession. Indeed, the American Medical Association is the outgrowth of Dr. Davis's earnest endeavor to raise the standard of medical education in this country. E.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, January 3, 1887.

THE PRESIDENT, EDMUND J. DOERING, M.D., IN THE CHAIR.

DR. E. J. KUH read a paper on

THE ETIOLOGY AND CURE OF ASTHMA.

(See p. 121.)

DR. J. A. ROBISON, in opening the discussion, said: The facts, which are indeed facts, that have been related in this paper are of interest not only to the specialist but to the general practitioner. It has been a fact long known to specialists that obstruction of the passage of air through the nares will give rise to asthma, and a great number of articles have been written on this subject. It has also been demonstrated that when operations have been per-

formed that cleared away these obstructions the relief from the asthmatic attacks was complete. This can be easily demonstrated by any physician. Cases of nasal polypus are quite frequent and they do not always fall under the care of a specialist. The operation is generally a very simple one, almost any physician, without special training, can remove nasal polypi, and it is really wonderful to find how many cases of asthma are thus cured. As to asthma being due to other causes, I have no doubt of the truth of the observation made by the author, that is that transitory swelling which takes place in the turbinated bodies in cases of mild irritation. I presume we have all noticed that when we are affected with an acute coryza and go to bed at night the narium of the side on which we lie becomes obstructed, and if we turn over the other side will become obstructed. This is undoubtedly due to the force of gravitation in a great many cases where the mucous membrane is especially sensitive. There is no doubt that in a great many cases by the irritation of a probe, or the inhalation of dust, coughing can be produced resulting in asthmatic attacks. Therefore this demonstrates that reflex irritation of the nares is one of the causes of asthma, and it points out very clearly the method of treatment which should be instituted. The author has rendered a service in showing that there are such a large number of cases in which by destroying the turbinated bodies we can prevent the occurrence of reflex asthma. It would have been an interesting question to solve whether, in the case of the author's personal experience, a respirator worn over the nose so that the air could not pass through the nose unless filtered, would have been of any benefit in preventing the recurrence of the asthma.

DR. H. MARTYN SCUDDER: About five years ago, when practicing in India, where I had to ride on horseback a great deal in the sun and breathe a great deal of dust, I suffered frequently from acute attacks of coryza, accompanied occasionally by bronchitis and slight asthma. The nose was not much obstructed, and when an attack of coryza came on fifteen minutes sleep would often cause it to pass away. Gradually the attacks became more severe and were accompanied and followed by some obstruction. When in London more than three years ago, Dr. Mackenzie wanted to cauterize my nose, but it was before the days of cocaine and I decidedly objected as I thought the remedy worse than the disease. Since coming to Chicago I have been troubled less than when abroad. Quite recently I had my nose cauterized by Dr. E. Fletcher Ingals, and it has certainly relieved the trouble to a very great extent. My experience, however, was somewhat different from Dr. Kuh's as the cauterization gave me considerable trouble for a week or two. It was followed by soreness and even by slight chills, and it made me feel out of sorts for about a fortnight, but it was successful in relieving the obstruction and I have had no more asthma or bronchitis, although once in a while I still suffer from coryza.

DR. JOSEF ZEISLER said: Professor Schnitzler, of Vienna, has published a number of cases in which decidedly polypus of the nose has caused asthma, and where by the use of the polypus the asthma was cured. I can confirm what Dr. Kuh has said in regard to the effectiveness of the galvano-cautery. I had a case of a boy 12 years old, who had nearly all his lifetime had chronic eczema of the hands and asthma. Believing that the asthma was in causal relation to the eczema, I referred the patient to Dr. Kuh for treatment of the former trouble, while I prescribed local applications for the hands. Very soon both affections were cured and have remained so for the last year.

DR. H. N. MOYER asked what the author means by the term essential asthma, whether he means reflex asthma or something different?

DR. KUH, in closing the discussion, said: By essential asthma, I, of course, mean, as I have been attempting to explain all the evening, reflex asthma; the same asthma which textbooks classify as idiopathic or nervous or essential asthma. In lieu of these clouded expressions we have now, fortunately, a term by which we express an etiological meaning; namely, nasal asthma. It teaches us again, that the term neurosis always smacks of the hypothetical; and that when we speak of any pathological condition as a neurosis, we do so in order to cover ignorance. An asthmatic individual is not necessarily a "nervous" one, although I, of course, am not blind to the fact that some unknown factor must come into play in order to affect disease through nasal reflex. In regard to Dr. Zeisler's remarks on the connection between polypi and asthma, I did not know that Schnitzler, of Vienna, had published forty cases of nasal polypus with asthma. I am greatly surprised that such a publication should have escaped my notice. I quoted Michel, of Berlin, as having reported 135 cases of polypus without asthma. There is no doubt that sometimes nasal polypi cause asthma, but as far as I am aware, only exceptionally so. Hack found that when a patient had polypus with asthma and he left the polypus untouched and cauterized only the turbinated bodies, the asthma disappeared, although the polypi remained in the nose. I think there can be no better evidence of the relative innocence of polypi than that experiment. I have been asked whether, if I had worn a respirator, I would have been free from asthma in traveling. I found that to be the case. For when I plugged my nose with cotton while traveling, I remained free from asthma. Dr. Scudder said that nasal cauterization gave him trouble for weeks. This could only have been through wound complication. An asthmatic may have very severe trouble for a week or less after cauterization, on account of the eschar.

In order to show how careful one must be in diagnosis I should like to interpolate the following description: A patient with the mildest form of asthma, namely, the occasional involuntary deep, sighing inspiration, consulted me. The examination was negative with the exception of slight tympanites (the abdomen should always be carefully examined in such cases) and slight swelling of the inferior turbinated bodies. I treated his mild constipation for

weeks, without any benefit to his respiratory trouble. Then I cauterized, also without effect. At last I discovered that his alæ nasi were so pliable that when he inhaled through the nose they collapsed and occluded the nares. In regard to the claim that injections of boracic acid solution into the nose will relieve asthma, I should simply refer to the uniformly condemnatory verdict of all specialistic practioners against the use of the nasal douche in such cases.

Dr. Elbert Wing, Pathologist to Cook County Hospital, showed

A HEART SHOWING ATHEROMA AT THE BASE OF THE AORTA AND IN THE MITRAL VALVE,

and a condition described by the Germans as *prior chronic endocarditis*. The last mentioned lesion itself in the distribution of grayish streaks or patches on the endocardial surface, lying irregularly distributed over it. When this lesion has proceeded far enough fatty degeneration follows, shown by patches which appear slightly yellowish to the eye. The patches upon the valves are upon the anterior segment of the mitral. They are simply interesting and would cause no symptoms whatever. I do not know that such a case has any further interest than that these things very frequently exist, and in my experience more than a majority of cases present lesions of prior chronic endocarditis.

Dr. Wing also exhibited

A LUNG SHOWING ONE OF THE POINTS OF DIFFERENTIAL DIAGNOSIS BETWEEN A CAVITY RESULTING FROM TUBERCULOSIS, AND ONE RESULTING SIMPLY FROM DILATATION OF A BRONCHIAL TUBE IN BRONCHIECTASIS.

That point is the persistence of bands, or stumps of bands, of the more resisting tissues which remain, sometimes passing across the cavity. As the fibrous tissues are more resistant than the others in the lung they are the last to disappear in the necrotic process. In this specimen there are a few cavities in the apex, some of them large, and the tubercular infiltration extends entirely to the base of the lower lobe of the right lung. There was extensive adhesion of the two layers of the pleura over the lung.

Dr. W. T. Belfield asked for a repetition of the diagnosis distinction between cavities due to tuberculosis and bronchiectasis.

Dr. Wing said: A cavity resulting from bronchiectasis has a smooth pyogenic membrane, and upon washing it, no stumps of these bands can be seen upon its floor, but in a cavity resulting from tuberculosis there are always some of these stumps or bands present. Sometimes they are very short, at other times long, and at times, as in this case, they are easily seen and demonstrated.

Dr. A. V. Park read a report of

A CASE OF ANTE-PARTUM HÆMORRHAGE AT TERM. RECOVERY.

(See page 124.)

Dr. A. V. Park reported

A CASE OF PYELITIS OF NINETEEN YEARS' DURATION, CAUSED BY A RENAL CALCULUS. RECOVERY.

(See No. 6, Vol. viii.)

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, January 12, 1887.

The President, J. Solis-Cohen, M.D., in the Chair.

Dr. H. A. Wilson read on behalf of Dr. John B. Roberts the report of

A CASE OF SUPRAPUBIC LITHOTOMY, FOLLOWED BY DEATH FROM PERFORATING ULCER OF THE STOMACH.

The following case of removal of stone from the urinary bladder by the suprapubic or high operation, is reported as proving the position which I have so long insisted upon, that this operation is easily accomplished, and is free from many of the dangers of the lateral perineal operation.

C. H., aged 63, applied to me for relief from frequent urination, and other bladder symptoms, and was sent to the wards of the Pennsylvania Hospital. Upon the introduction of the lithotomy sound, it was easy to discover the presence of a stone. When the catheter was used, the stone was struck before any urine was drawn from the bladder, apparently proving that the calculus lay close behind the prostate gland. The patient was a very fat man, with poor circulation, and evidently a bad subject for etherization or operation. The urethra was large and easily distended. It therefore seemed to me proper to attempt the removal of the stone by the rapid crushing method.

With this object in view, I had him frequently dilated with large bougies, in order that the urethra and bladder might become tolerant to the contact of instruments. Subsequent to this preparatory treatment, I made an attempt to crush the stone with a lithotrite, expecting to evacuate the fragments by the ordinary method of Bigelow. Repeated efforts proved the impossibility of seizing the stone, either because it was too large to fall into the grasp of the blades of the instrument, or because it was encysted behind the prostate gland. Even with a finger in the rectum, and with the jaws of the lithotrite turned downward, seizing the stone was impossible.

As the man's perineum was deep, and as I believed that the perineal operation was inferior to the suprapubic one, because of the liability of hæmorrhage, of injuring the seminal ejaculatory apparatus, and also because of the supposed size of the stone, and its possibly encysted character, I determined to perform the suprapubic operation.

After etherization, a rubber bag, to which was attached a long tube, was placed in the rectum, and filled with about twelve ounces of warm water. The bladder was afterward filled with 6 or 8 ounces of a weak solution of bichloride of mercury. A three-inch incision was then made in the median line through the skin and a depth of nearly two inches of adipose tissue. The muscles were then separated, and the tissues torn through with my finger until I came upon the distended bladder. By means of a curved needle I passed a string through the top of the bladder, and brought both ends out of the wound to serve as a

handle by which the bladder could be held up close to the surface. A longitudinal incision of about an inch in length was then made in the anterior wall of the bladder from above downward. The water immediately escaped from the bladder, and on the introduction of my finger I felt a large flattened stone lying in the lower portion of the organ, but not encysted. After some little difficulty the calculus was seized in ordinary lithotomy forceps and drawn out of the bladder, the wound in which was then closed with interrupted catgut sutures. The muscles were brought together by buried sutures of catgut, and the integument subsequently closed in the same manner. A drainage-tube was carried in at the middle of the incision, and pushed down into the space between the anterior wall of the bladder and the pubic bone. The edges of the wound were finally sprinkled with powdered iodoform, and the ordinary antiseptic dressing of gauze and corrosive sublimate applied. A hard-rubber catheter was left in the urethra in order to drain the bladder. At the end of twenty-four hours it was found impossible to keep the catheter in the bladder because of the pain which it gave the patient. Accordingly, his urine was drawn at frequent intervals by means of a catheter similar to that originally introduced, but it was very difficult to keep the dressings properly applied and avoid their becoming soiled by the urine.

Three days after the operation the wound seemed well united along the surface, and a couple of days later the drainage-tube and two of the sutures were removed. Dribbling of the urine soon began to occur through the opening left by the withdrawal of the tube. This continued until eight days after the operation, upon which day the last suture was removed. On the evening of the same day the patient vomited about six ounces of blood, and during the straining of the vomiting on that day, or on account of the sitting up in bed a few days later, the wound became gaping throughout its entire length. The edges of this reopened wound were again brought together by sutures of silkworm-gut and shot.

From this time forward the man's general condition was bad, although the wound gradually closed, except superficially, and all dribbling of urine from the wound ceased. In fact, he seemed to have recovered from the local effects of the operation, and to have left merely the deep wound through the skin and superficial fascia. Here the granulations were sluggish, and the repair of the opening in the fatty tissues and skin very inactive. He was, however, able to pass his urine normally through the penis, and, so far as urinary symptoms were concerned, was in a very comfortable condition. There persisted, however, nausea, a dull, uncomfortable feeling of pain in the epigastric region, and a total want of appetite. I was unable to make any definite diagnosis as to the meaning of these symptoms. Disease of the liver or stomach were the suggestions which came to mind.

Two months after the operation he suddenly suffered intense pain in the epigastrium, and immediately went into a condition of profound shock, from which he never reacted. A few days before this time he had been sitting up in a chair every day, and the wound in the abdomen was almost closed. He had no trouble in urinating, and was very comfortable, except for the epigastric pain and the great weakness.

The post-mortem examination showed a large gastric ulcer the size of a silver dollar, which had caused perforation of the walls of the stomach, and had allowed its contents to escape into the peritoneal cavity. The cause of the vomiting of blood, of the impaired nutrition, and of the constant pain which he suffered for many weeks before his death, was, therefore, shown to be a gastric ulcer, probably present before the time of operation, but latent in regard to symptoms.

The ease with which the suprapubic operation can be performed, due largely to the distension of the rectum and bladder by the fluid forced into them previous to making the first incision, was clearly demonstrated in this case. The facts that union of the bladder wound and early restoration of the functions of the bladder in regard to urination readily occur after the high operation for stone, and that wounding of the peritoneum is easily avoided, make this method of removing vesical calculi very satisfactory. The unfortunate death of the patient from disease of the stomach does not in any way vitiate the results of the operation; for, although the patient had not recovered sufficiently to be discharged from treatment, still the operation had effected the results which I sought.

THE PRESIDENT presented

A SERIES OF THREE EPITHELIAL OR PSEUDO-MEMBRANOUS CASTS OF THE TONSILS AND PALATINE FOLDS OF A CASE OF DIPHTHERIA.

The patient is an adult, and has exhibited no symptoms of a constitutional infection. The local disease was limited to the tonsils and palate: one tonsil became parenchymatously enlarged and underwent suppuration. The abscess was opened twice. At present there is an additional abscess in the upper portion of the palate. There has been no complication in the case except from difficulty in deglutition, so great that for forty-eight hours the patient had to be nourished mainly by the rectum. Two days ago there was brought to me a thin sheet of false membrane, which was an accurate mould of the tonsil and palatine fold. Yesterday a similar mass of desquamation, having much the same shape, was brought; and this morning a third mould has been thrown off. The appearance of the second cast closely resembles a cast of the interior of the larynx and trachea, and could readily have been mistaken therefor had there been any laryngeal complication. Manipulation, however, demonstrates that it has sheathed the tonsil and one of the palatine folds.

The point to which particular attention is called, is the physical resemblance of these patches to the desquamated epidermis in scarlatina.

DR. J. H. BRINTON made some remarks

ON THE USE OF WHALEBONE BOUGIES IN THE TREATMENT OF URETHRAL STRICTURES.

I propose, for a few moments, to ask the attention of the Society to some points in the application of

filiform bougies to the treatment of urethral stricture, although it is not my purpose to institute any comparison between other modes of treatment and that of which I shall speak. I wish merely to refer to the process of rapid dilatation, effected in the course of a few minutes, by the introduction of stretching instruments, the employment of which is preceded and accompanied by the use of filiform bougies. When these latter were first introduced they were warmly welcomed, but I think that of late some disappointment has been felt in regard to their efficiency, a disappointment which, however, I do not share. I believe that in these instruments we have an efficient mode of treating stricture, provided they be properly constructed, and skilfully manipulated.

As I have never been quite satisfied with the whalebone filiforms of the shops, I have for some years been in the habit of making my own, and with these I have experienced comparatively little difficulty in treating stricture, and in relieving obstinate cases of retention. My experience has convinced me that all organic urethral strictures of non-traumatic origin are pervious to the filiform bougie, patiently and systematically essayed, and this is the essential and starting-point in the treatment which I prefer.

In making my bougies I purchase the material from a dealer in New York. These long, slender, rounded whalebones of various thicknesses are articles of commerce and are used for many purposes in the arts. They are rounded through a drawplate, and come in lengths of twenty-seven to twenty-eight inches, costing about two dollars a gross. Each piece will make two bougies. In preparing them I first cut off the end transversely, so as to get rid of any tendency to split. I then round the end by rubbing it lightly on a sheet of emery-paper gummed upon a board. I then make the extremity bulb-shaped. I am told that the bulb is usually produced by the action of a file. This, I think, is objectionable, as it impairs the fibre of the bone, and renders it liable to break or cut when metallic instruments are slid down over it. I make the bulb extremity by placing the end of the whalebone in a groove on the board, and shave or scrape it from the end with a very sharp knife. I then shave down the shank and neck in like manner in the opposite direction, until I have formed a conical neck from three to four inches long and of almost capillary thickness as it approaches the bulb. The shaping of the bulbar end demands some dexterity in handling the knife, and to insure accuracy I do this under a lens of low power. Having shaped the filiform with the knife, it may, if desired, be yet more smoothed by being rubbed laterally on the emery board. In case cylindrical whalebone cannot be obtained from the manufacturers, the irregular strips may be readily rounded by being passed through a watchmaker's drawplate, or wire gauge. As the filiform bougie is the guide upon or over which metallic instruments are to be passed, each one should be carefully fitted. This can be done by frequently passing it upward and downward through the tunnelled perforation in the beak or extremity of each and every instrument in conjunction with which it may in future be used. This may seem a small matter, but, in fact, the harmonious action of the guide bougie and its metallic companion has much to do in effecting a ready passage of a stricture point. [The speaker here illustrated the process of constructing the bougie.] After using one of these instruments, should the neck become bent or twisted, I place it for a moment in hot water, and then press it between the leaves of a book.

In endeavoring to pass a stricture I make the first attempt with a single whalebone; if it passes, well and good. If it does not go through, I follow it with others, perhaps five or six, until the follicles or folds of the mucous membrane near the stricture are occupied. Then by patiently essaying the inserted filiforms, I almost always succeed in getting beyond the stricture at the first sitting. Sometimes, although very rarely, and in non-urgent cases, if great difficulty be encountered at the first trial, and the patient be frightened and irritable, it may be advisable to desist for the day, and to make a subsequent second attempt. Success at the first trial is, however, the rule, if the instruments be well made, and the efforts be gentle. There is, however, a caution to be observed as to the time of making use of filiform instruments. Their application in cases of tight stricture should be primary—I mean that one cannot expect to succeed with them if they have been preceded on the same day by the attempted introduction of round-ended instruments, the tendency of which undoubtedly is to obscure or close in some way the narrow opening of a resisting stricture, and thus to render its detection more than usually difficult. I may add here that I always use the straight filiform.

The whalebone, when once introduced, serves as a guide to the metallic catheter, or stretching instrument. This may be the tunnelled catheter, or any of the various forms of ditators or divulsors; preferably, I think, that of Sir Henry Thompson, followed by the powerful and most efficient instrument designed by Professor S. W. Gross, and which registers from 16 to 40 of the French scale.

In using metallic instruments in conjunction with the filiforms, there is one point to which, I think, attention has not been directed. We are ordinarily told to slide the metallic instrument over the whalebone through the stricture into the bladder; in so doing, the whalebone may be cut at the seat of stricture. I have often heard of this accident, and I have seen it happen. I avoid it in this manner: Having passed the whalebone into the bladder, I carry the metallic instrument—threaded on it, as it were—down until I reach the stricture, the point of resistance. I then cease to push the metallic instrument along the filiform, but slightly withdrawing the latter to gain a little by its conicity, I grasp firmly both instruments between my thumb and finger, and carry them on together. In this way I am almost certain to pass the resisting point, and, if the stricture be single, to reach the bladder. I speak on this matter somewhat positively, since I have used these instruments largely, and cannot, for many years, recall a case which I have failed to pass in the manner described.

In employing the stretching instrument I usually

separate the blades as far as No. 30 or No. 35 of the French scale, and on its withdrawal, introduce a steel bougie of about the same calibre, to see that all is right and that the urethra is clear. The bougie is then removed and is not reintroduced until the third or fourth day. The after-treatment consists in the hypodermic use of morphia, etc., full doses of quinine, and in a milk diet.

In retention dependent upon tight and irritable stricture, not readily overcome by the catheter, I have often succeeded by simply passing a whalebone into the bladder and leaving it *in situ*. The urine will readily pass along the filiform by capillary action, and the steady dribbling thus established will in a short time empty the bladder. The presence of the whalebone serves also to render the stricture less tight, and so facilitates the after-passage of metallic instruments, should their use be considered desirable.

DR. S. W. GROSS said: I take it that Dr. Brinton has confined his remarks to the treatment of very tight strictures. I think that the younger members of the profession, who are not much accustomed to the use of filiform bougies, ought to be told not to put too much confidence in them. The filiform bougie does not pass with a great degree of readiness through a small stricture, or even through a large one in all cases. I differ from the speaker in regard to the usefulness of the twisted bougies. In the great majority of strictures the orifice is eccentric. A twisted bougie will often pass after we have failed to pass a straight bougie, although the urethra has been packed with them.

We know that in cases of stricture not the result of traumatism, the obstruction does not arise from the organic stricture itself. A man may have been suffering with stricture for some time, and the calibre of the urethra have been gradually narrowing until the stream of urine becomes very small. In this condition he exposes himself to cold and wet, and in the course of a few hours is unable to pass urine. In such a case the obstruction is not due directly to the organic stricture, but there is a superadded spasm of the muscles of the urethra, and it is spasm which we have to overcome rather than the coarctation itself. In such a case, the patient being under the influence of an anæsthetic, I carry a medium-sized instrument, say one whose shaft measures No. 16 and whose point is No. 13 of the French scale, down to the stricture, supporting, if necessary, the curve of the the instrument with the finger on the perineum or in the rectum. In the majority of cases gentle pressure for a few minutes will enable the instrument to pass into the bladder. I have succeeded in this way in cases where I have failed to introduce a filiform bougie. A convenient way of passing the filiform bougies is first to pass into the urethra to the seat of stricture a short metallic tube, and then carry the whalebone bougies through this tube.

I have met with the difficulties referred to in the manufacture of the whalebone bougie. The cutting of the bougie is often due to the instrument which passes over it. The eye is at times so sharp that it strips up the whalebone. Care should be taken to see that the opening is well rounded.

In the operation described by Dr. Brinton, which is the one to be used if it is so desired in these cases, it is always well after passing the coarctation and relieving the retention, to bring the urethra up to a certain calibre, and that is another point in the treatment of stricture. How shall we know to what extent we shall divulse or excise a stricture? The operation described to night is really that of divulsion. I had to day at my clinic a case in point. It was that of a young man from a distance. He was etherized, and in order to determine to what extent the stricture should be cut or dilated, I introduced into the urethra the urethrometer, with which we can measure the capacity of the urethra. In this case there were two strictures. Immediately in front of the first, which was six and one fourth inches from the meatus. the urethra had a capacity of No. 31. In such a case, as the stricture always shows a tendency to contract, it is well to cut or rupture it to No. 34 or 35, to allow for the subsequent contraction.

The instrument to which Dr. Brinton has referred, I had made more particularly for the purpose for which he has used it. At the time that I invented this instrument, I was a rather firm believer in the treatment of stricture by divulsion. I do not employ this method now, although I would use it in a case of retention of urine. It is no more dangerous than cutting, and cutting is no more dangerous than divulsion. The cutting can be more accurately limited than the divulsion. With the latter method we tear not only the stricture, but also the mucous membrane at some distance in front of and behind the stricture. In a specimen in my possession where divulsion was employed, there were no less than nine rents in the mucous membrane, and the rent in the stricture was oblique and had not gone completely through the stricture. This method will do in superficial strictures, but in hard fibrous strictures we have to supplement this operation with urethrotomy. It is for this reason that I have given up divulsion for internal urethrotomy, and I do not resort to this latter operation so frequently as I formerly did. When the patient is within convenient distance, I much prefer, in ordinary cases of inflammatory stricture, and in recent cases more particularly, to resort to gradual dilatation. I have reached the firm conviction that the cases in which radical cure is produced by divulsion, internal incision, or external incision, are so rare that it is rarely worth while to resort to these operations.

DR. CHARLES B. NANCREDE said: While agreeing with most of that which has been advanced by Dr. Brinton, I am rather more in accord with the last speaker. When I intend to do any radical operation, I prefer incision, for then I know exactly what I am doing. My experience teaches me that filiform bougies are not always easily passed through a stricture, even when it is of comparatively large size. Where I have failed to pass the filiform bougie, I have frequently succeeded with a metallic instrument of fair size. I have never had to tap a bladder for retention, but have always succeeded, sooner or later, in getting into the bladder with a filiform bougie.

Although well aware of the eccentric position of

the orifice of most strictures, I was particularly struck with the usefulness of recognizing this fact some years ago, in a case of organic stricture in which the urethra had ruptured. Dr. Packard had made several incisions to relieve the infiltration of urine, and when the patient was turned over to me as a hospital case, the larger part of the urine was passed through an opening at one side of the root of the penis. I tried, on a number of occasions, to pass filiform and other bougies, but always failed. I then called a consultation, intending to perform external urethrotomy. Under ether, I again failed to pass any instrument. I asked Dr. Packard to try. Passing the bougie down to the stricture, he carried it transversely to the left, at a right angle to the course of the urethra, passed it in this direction for about half an inch, and then again by a right-angled turn passed the instrument on in the normal direction of the urethra through the stricture, which was not tight. The instrument was tied in, and the patient eventually recovered. In like manner, a twisted filiform bougie may do good service in a tight stricture. I do not think that the filiform instrument is entirely free from danger in the hands of a tyro. There are cases in which the extremity has been caught in a crypt behind the stricture, a false passage made, and this erroneous route has been followed up with other instruments. Whalebone filiform bougies are, however, of the utmost value when skilfully used, and I should feel completely lost without them to fall back upon in a difficult case. Like Dr. Brinton, I have found it necessary to make them myself. I heartily endorse his method of procedure after the tunnelled catheter or sound has entered the stricture, and have for years resorted to it myself, with invariable success.

Dr. Brinton said: The remarks which have been made only show that every surgeon operates according to the habit of his own mind and hand. While I do not claim that the method which I have described is better than that of others, I can only say that it is one which I have followed for many years, which has yielded me great success in the past, and to which I look forward with confidence in the future. I believe, too, that uniform success in this procedure can only be secured by the use of properly constructed filiforms, and by the observance of the cautions to which I have referred.

STATE MEDICINE.

A PROPOSED PHARMACY LAW,

Adopted by the Legislative Committee of the Nebraska State Pharmaceutical Association.

AN ACT

To Regulate the Practice of Pharmacy and Sale of Poisons, and to Prevent Adulterations in Drugs and Medicinal Preparations in the State of Nebraska.

Whereas, The safety of the public is endangered by want of care in the sale of poisons, whether to be used as such for legitimate purposes, or employed as medicines, and dispensed on the prescriptions of physicians.

And Whereas, The ability of physicians to overcome disease depends greatly upon their obtaining good and unadulterated drugs and properly prepared medicines.

And Whereas, The persons to whom the preparation and sale of drugs, medicines and poisons properly belong, known as apothecaries, chemists and druggists, or pharmacists, should possess a practical knowledge of the business and science of pharmacy in all of its relations; therefore,

Be it enacted by the Senate and House of Repesentatives, of the State of Nebraska, and it is hereby enacted by the authority of the same:

Section 1. That there shall be established in the State of Nebraska a Board to be styled the Nebraska State Board of Pharmacy, said Board shall consist of the Attorney General, Secretary of State and Auditor: And said Board shall appoint and choose three examiners or secretaries who shall be skilful retail apothecaries of seven years' practical experience, actually engaged in said business in the State of Nebraska; and said Secretaries shall assist said Board in conducting all examinations hereinafter provided for, and in the performance of any of its duties.

Each of said Secretaries shall receive a compensation of five dollars per day for each days service actually and necessarily performed, and such necessary expenses, as shall be audited and found just and reasonable by said Board for attending the meetings thereof

Provided, that all such services and expenses, and all the necessary expenses of said Board shall be paid out of the moneys received by said Board for fees, all moneys received in excess of said per diem allowance, and other expenses above provided for shall be paid into the State Treasury at the end of each year, and so much thereof as shall be necessary to meet the current expenses of said Board shall be subject to the order thereof, if, in any year the receipts of said Board shall not be equal to its expenses. The Board shall make an annual report and render account to the State Auditor and to the Nebraska State Pharmaceutical Association, of all moneys received and disbursed by it pursuant to this Act. And the State of Nebraska shall in no case be liable for any such compensation or expenses.

And Provided further that said Board shall have the power to discharge any of said Secretaries at any time and to fill any vacancy in the position of Secretary whenever from any cause such vacancy exists.

Sec. 2. The said Board shall within thirty days after its appointment, meet, and organize by the election of a President and Secretary, from its own members, who shall be elected for the term of one year, and until their successors are elected, and shall perform the duties prescribed by the Board. It shall be the duty of the Board to examine all applications for registration submitted in proper form; to grant certificates of registration to such persons as may be entitled to the same under the provisions of this Act;

to investigate complaints and to cause the prosecution of all persons violating its provisions; to report annually to the Governor and to the Nebraska State Pharmaceutical Association upon the condition of Pharmacy in the State, which said report shall also furnish a record of the proceedings of the said Board for the year, and also the names of all Pharmacists duly registered under this Act; the Board shall hold meetings for the examination of applicants for registration, and the transaction of such other business as shall pertain to its duties, at least once in four months, said meeting to be held on the first Tuesdays of March, July and November in each year; and shall make By-laws for the proper fulfilment of its duties under this Act, and shall keep a book of registration in which shall be entered the names and places of business of all persons registered under this Act, which book shall also specify such facts as said persons shall claim to justify their registration. The record of said Board or a copy of any part thereof, certified by the Secretary to be a true copy, attested by the Seal of the Board, shall be accepted as competent evidence in all Courts of the State. Two members of said Board shall constitute a quorum.

SEC. 3. Every person who shall, within three months after this Act takes effect, forward to the Board of Pharmacy satisfactory proof, supported by his affidavit, that he was engaged in the business of a Dispensing Pharmacist on his own account in this State at the time this Act takes effect, in the preparation of physicians' prescriptions, or that at such time he had been employed or engaged three years or more as a Pharmacist in the compounding of physicians' prescriptions, and was at said time so employed in this State, shall, upon the payment to the Board a fee of two dollars, be granted the certificate of Registered Pharmacist: *Provided*, that in case of failure or neglect to register as herein provided, then such person shall, in order to be registered, comply with the requirements provided for registration as a licentiate in pharmacy hereinafter described.

SEC. 4. No person other than a licentiate in pharmacy shall be entitled to registration as a pharmacist, except as provided in section three. Licentiates in pharmacy shall be such persons not less than 18 years of age, who shall have passed a satisfactory examination touching their competency before the Board of Pharmacy. Every such person shall, before an examination is granted, furnish satisfactory evidence that he is of temperate habits, and pay to the Board a fee of three dollars. *Provided*, that in case of the failure of any applicant to pass a satisfactory examination, the money shall be held to his credit for a second examination at any time within one year. The said Board may grant certificates of registration without further examination to the licentiates of such other Boards of Pharmacy as it may deem proper, upon payment of a fee of two dollars.

SEC. 5. The said Board may grant, under such rules and regulations as it may deem proper, at a fee not exceeding one dollar, the certificate of registered assistant, to clerks or assistants in pharmacy, not less than 18 years of age, who at the time this Act takes effect shall be engaged in such service in the State, and have been employed or engaged two years or more in the practice of pharmacy, but such certificates shall not entitle the holder to engage in such business on his own account, or to take charge of or act as manager of a pharmacy or drug store.

SEC. 6. Every registered pharmacist, or registered assistant, who desires to continue the practice of his profession, shall annually, after the expiration of the first year of his registration, during the time he shall continue in such practice, on such date as the Board may determine, pay to the said Board a registration fee to be fixed by the Board, but which shall not exceed one dollar for a pharmacist, or fifty cents for an assistant, for which he shall receive a renewal of said registration. Every person receiving a certificate under this Act shall keep the same conspicuously exposed in his place of business. Every registered pharmacist, or assistant, shall, after changing his place of business or employment, as designated by his certificate, notify the Secretary of the Board of his new place of business. If any pharmacist or registered assistant shall fail or neglect to procure his annual registration, or to comply with the other provisions of this section, his right to act as such pharmacist or assistant shall cease at the expiration of ten days from the time notice of such failure to comply with the provisions of this section shall have been mailed to him by the Secretary of said Board.

SEC. 7. All or any registrations obtained through false representations shall be void, and the Board of Pharmacy may hear complaints and evidence, and may revoke such certificates as it may deem improperly held.

SEC. 8. Any proprietor of a pharmacy who, not being a registered pharmacist, shall, ninety days after this Act takes effect, fail or neglect to place in charge of such pharmacy a registered pharmacist, or any such proprietor who shall by himself, or any other person, permit the compounding or dispensing of prescriptions, or the vending of drugs, medicines, or poisons, in his store or place of business, except by, or in the presence, or in and under the supervision of a registered pharmacist or registered assistant; or any person, not being a registered pharmacist, who shall take charge of or act as manager of such pharmacy or store, or who, not being a registered pharmacist or registered assistant, shall retail, compound, dispense drugs, medicines or poisons, or any person violating any other provision of this act to which no other penalty is herein attached, shall be deemed guilty of a misdemeanor, and for every such offense, upon conviction thereof, shall be punished by a fine of not less than ten nor more than one hundred dollars, and in default of payment thereof, shall be imprisoned not less than ten days, nor more than ninety days, or both such fine and imprisonment, in the discretion of the court.

SEC. 9. Nothing in this Act shall apply to the business of any retail dealer engaged in business at a distance of not less than five miles from the limits of any incorporated village or city, except physicians' prescriptions, or with the vending of the patent or proprietary medicines by any retail dealer, nor with the selling of, by any person, of drugs, medicines,

chemicals, essential oils or tinctures which are put up in bottles, boxes or packages, bearing labels securely affixed, which labels shall bear the name of the pharmacist or druggist putting up the same, the dose that may be administered to persons 3 months, 6 months, or 1 year, 3 years, 5 years, 10 years, 15 years and 21 years of age, and if a poison, the name or names of the most common antidotes; of coperas, borax, blue vitrol, saltpetre, pepper, sulphur, brimstone, Paris green, licorice, sage, senna leaves, castor oil, sweet oil, spirits of turpentine, glycerine, glauber salts, cream tartar, bi-carbonate of soda, sugar of lead, and such acids as are used in coloring and tanning, nor with the selling of paregoric, essence of peppermint, essence of ginger, essence of cinnamon, hive syrup, syrup of ipecac, tincture of arnica, syrup of tulu, syrup of squills, spirits of camphor number six, sweet spirits of nitre, laudanum, quinine, and all other preparations of cinchona bark, tincture of aconite, and tincture of iron, compound cathartic pills, or quinine pills, when such cathartic or quinine pills are compounded by, or put up in bottles or boxes bearing the label of registered pharmacist, with the name of article and directions for its use on each bottle or box, nor with the exclusively wholesale business of any dealer. Nothing in this Act shall prevent a physician from compounding his own prescriptions.

SEC. 10. No person shall add to or remove from any drug, medicine, chemical, pharmaceutical preparation, any ingredient or material for the purpose of adulteration or substitution, which shall deteriorate the quality, commercial value or medicinal effect, or which shall alter the nature or composition of such drug, medicine, chemical, or pharmaceutical preparation, so that it will not correspond to the recognized tests of identity or purity. Any person who shall thus wilfully adulterate or alter, or cause to be adulterated or altered, or shall sell, or offer for sale any such drug, medicine, chemical, or pharmaceutical preparation, or any person who shall substitute, or cause to be substituted, one material for another, with the intention to defraud or deceive the purchaser, shall be guilty of a misdemeanor, and be liable to prosecution under this Act. If convicted he shall be liable to all the costs of the action, and for the first offense be liable to a fine of not less than ten dollars nor more than one hundred dollars, and for each subsequent offense, a fine of not less than twenty-five dollars nor more than one hundred and fifty dollars. On complaint being entered, the Board of Pharmacy is hereby empowered to employ an analyst or chemist, whose duty it shall be to examine into the so-called adulteration, substitution or alteration, and report upon the result of this investigation; and if said report shall be deemed to justify such action, the Board shall duly cause the prosecution of the offender, as provided in this Act.

SEC. 11. All suits for the recovery of the several penalties prescribed in this Act shall be prosecuted in the name of the people of the State of Nebraska, in any court having jurisdiction, and it shall be the duty of the prosecuting attorney of the county where such offense has been committed, to prosecute all persons violating the provisions of this Act, upon proper complaint being made to him.

SEC. 12. The pharmacist of every house dispensing and compounding medicines, registered under this Act, shall be exempt and free from all jury duty in the courts of this State.

SEC. 13. All acts and parts of acts in conflict with the provisions of this Act are hereby repealed.

FOREIGN CORRESPONDENCE

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Frisch's Report on Pasteur's Method.

La Semaine Médicale, of January 1, has published a report of Professor von Frisch, of Vienna, on the researches of M. Pasteur on the rabic virus and his method of prophylaxy against rabies, and as the subject is of the highest importance, I reproduce here the conclusions of the Vienna Professor, giving the results of his own researches:

1. In animals which have died from rabies the virus exists in its most concentrated form in the central nervous system (brain and spinal marrow). 2. Small quantities of the cerebro-spinal substance of animals which have died from rabies, injected under the dura mater by trephining, provoke with certainty the same disease in animals infected after a latent period of from fourteen to twenty-one days, which disease may be transmitted from these to other animals. 3. The same disease, with the same symptoms and after the same period of incubation, may be produced in animals by intra-cranial injection with particles of the spinal marrow of human beings who have died of rabies, thus proving the identity of the affection in man and in the lower animals. 4. By the subcutaneous injection of the cerebro-spinal subtance, infection is less sure, and the period of incubation longer, than by intra-cranial infection. 5. The quantity of virus injected under the skin appears to be in an inverse relation with the duration of the period of incubation: the less the quantity injected, the longer is the period of incubation. 6. By the continual intra-cranial transmission of the rabic virus contained in the cerebro-spinal substance of rabbits, one obtains, after a series of generations, a shortening of the period of incubation, irregular at first, but more regular and always increasing later on. 7. The "fixed virus" of a period of incubation of seven days, which M. Pasteur obtains by inoculation from rabbit to rabbit in from forty to fifty generations, surpasses, in intensity, the virus of "street rabies," not only by the more precocious appearance of the disease, but also because the animals, without exception, die from rabies, as well after the subcutaneous injection as by inoculation under the dura mater. 8. The fixed virus does not seem to undergo by ulterior transmissions a notable shortening of the period of incubation, the malady sometimes commencing after six days. On the other hand the period of incubation of seven days is not constant, as it is sometimes prolonged to eight, ten, and even twelve days. One

may also obtain a period of incubation of from eight to twelve days, and consequently a virus of the same virulence as that of the fixed virus, by the transmission of street rabies, and that occasionally from the second or the third generation. 9. The procedure indicated by M. Pasteur to obtain a fixed virus of a period of incubation of seven days, is perhaps not the only one, as the said virus may sometimes be obtained much earlier, independently of the transmissions, and this virus is constant in its effects and in its period of incubation. 10. The virulence of portions of the spinal marrow diminishes from one day to another by dessication at 20° centigrade over caustic potash, and is completely destroyed after a dessication of twelve or fourteen days. 11. Animals that have been subjected to subcutaneous injections of a series of attenuated inoculations (by more or less lengthened dessication), are rendered refractory to the stronger virus by the previous inoculations with the weaker virus, if the stronger virus have not been used in too rapid succession. 12. Animals which have been inoculated subcutaneously during ten days with virus of progressive virulence (spinal marrow from ten days to one day) have not been refractory to infection with the fresh virus of "street rabies," and have only exceptionally escaped after intra-cranial infection. 13. Rabbits and dogs infected after trephining with the virus of street rabies of sixteen days' incubation have, without exception, succumbed, notwithstanding the preventive treatment already described. 14. M. Pasteur attributed to *the method of slow vaccinations* the unsatisfactory results obtained previously by M. von Frisch, and recommended a more rapid procedure. The experiments carried out conformably to M. Pasteur's instructions have given no favorable results whatever; all the animals died of rabies. 15. These experiments have demonstrated a very important fact: that is, that by the rapid procedure, the weaker spinal marrows do not confer the same certainty of immunity against the stronger ones of a series of dogs and rabbits, which have served as a control experiment, referred to in the preceding paragraph, and in which the rapid process was carried out without previous infection, most of the animals died of rabies. 16. Most of the animals which were submitted to the preventive treatment after subcutaneous inoculation with street rabies, died of the disease, even when the period of incubation was thirty-four days.

M. von Frisch asserts that these experiments show that M. Pasteur's method of rendering animals refractory to rabies is, as yet, not quite certain. There is not yet a sufficient scientific basis for the application in man of a preventive treatment after the bite of a rabid animal. Moreover, it is quite possible that by the preventive treatment itself, at any rate by the rapid procedure recently recommended by M. Pasteur, the malady itself may be transmitted. In taking a glance over what precedes, it will be seen that the conclusions 1, 2, 4, 5, 6, 7, and 10 only concord with those of M. Pasteur. A. B.

DOMESTIC CORRESPONDENCE

COCAINE IN MINOR SURGERY.

Dear Sir:—I desire to give my experience in the use of injections of cocaine in minor surgery, for producing complete local anæsthesia by injecting into the part, through a fine needle, one or two drops of a four per cent. solution of cocaine. For this purpose I use the thinnest steel needle procurable—a very delicate needle sold by Tiemann & Co., which they bill as "Green's."

My experience leads me to think that some of the surgeons using cocaine for local anæsthesia inject more than is necessary. Its local action, as I have observed it, is anæsthetic and anæmic. When injected it causes much more local congestion and irritation of the integument than morphine. It greatly aids morphine to relieve any form of neuralgia, especially facial, and migraine. Is it the hydrochloric acid that chiefly causes the local irritation? Is the plain drug *cocaine* less irritating than the hydrochlorate, benzoate, etc.? I cannot answer from experience. A full dose hypodermically—gr. ss–j, often much less—will cause quite free sweating, and frequently a momentary sense of painless dilatation of the heart, a peculiar feeling, like that sometimes felt in the beginning of syncope. I believe its effects are toxic in most cases when more than one-half grain is given hypodermatically, although the dose, as of other drugs, varies in effect according to temperament, use, state of system, etc.

During the last half year I have several times used, on my own person, for the relief of intense neuralgic pain, Magendie's solution of morphine, to which a four per cent. solution of cocaine was added, the medicine being injected under the skin, as usual. For five minutes or so after each injection an area of two to four inches surrounding the puncture appeared to be quite devoid of sensibility.

On January 2 my partner, Dr. W. A. Cottle, was suffering agonizing pain and inflammation of his forefinger, which he had pricked slightly, with a needle, during an amputation of a gangrenous finger the day before. It was decided to incise the finger, freely, to the bone, to relieve tension, and he sat there dreading the knife, as doctors do, yet too proud to inhale ether. I suggested cocaine, only to be laughed at, but on mentioning my experience was permitted to try it.

Accordingly I injected, near the centre of the ball of the finger, into the skin only, two drops of the cocaine and morphine solution. A moment later the doctor deliberately plunged his bistoury down through the periosteum and cut outwards, making a gash in the skin eight lines in length. He cut as deliberately as he could have if I had been the victim instead of himself, never wincing in the least, and exultingly exclaimed that it did not hurt at all.

With the fine implement above named scarcely any pain is caused by the puncture, which may go through the skin or into it, so that it reach the absorbent vessels. The opening of abscesses and felons, too often postponed from sheer dread of the knife, may thus

be relieved of its terror. It is now known that a small member may be amputated painlessly, without general anæsthesia, by injecting cocaine in two or three places around the limb near the line of incision.

For relief in extracting teeth, cocaine applied to the gums has been generally voted a failure. I would suggest a trial of it by injecting a drop or two into the gum on each side of the tooth, believing it will greatly diminish the pain. Use only the very thin needle named above, for one might as well suffer the operation as the use of such *crow bars* as I have seen physicians employ.

I venture the hope that cocaine may soon be more generally used in this way.

Very respectfully,

ALMON CLARKE, M.D.

Sheboygan, Wis., January 6, 1887.

LOCAL ANÆSTHESIA.

Dear Sir:—In an article in THE JOURNAL of October reference is made to a suggestion of Dr. Franklin H. Martin, of Chicago, who utilizes the properties of the galvanic current discovered by Haertner, who ascertained the valuable fact that particles in solution would, under the influence of a galvanic current, pass through permeable bodies from the positive toward the negative pole of the battery. This important fact caused the writer to experiment on the best mode of applying it so as to produce local anæsthesia and other influences. I think my plan superior to that adopted by Dr. Martin, although the same principle is involved in both.

I draw on the part to be experimented upon a hard-rubber cup of any size, under which I put a piece of light rubber cloth, pierced by a small brass wire, to which is attached, on the under surface, a brass button. Around this I wind cotton-wool, which, being saturated with a ¼ per cent. solution of muriate of cocaine, I place under the cup, and on producing suction the whole appliance is drawn to the part. The rubber cloth, being held by the rim of the cup, makes a nice pressure upon the part to which it is applied. The blood is drawn to it by the suction, and the tissue is thereby made more permeable. The wire is united with the negative pole and the current turned on.

I have in this way produced the most satisfactory results, and at the same time most permanent. Air being excluded from the solution, no evaporation takes place. The appliance is hard to explain without diagrams, but I trust my suggestion will be sufficiently explicit for those who may wish to utilize it. The cup and rubber appliance referred to can be used in many ways in local and surface medication.

Very truly yours, J. W. HARVEY, M.D.

Indianapolis, Ind., December 20, 1886.

MISCELLANEOUS.

TENNESSEE STATE BOARD OF HEALTH.—The Governor of Tennessee pays a well deserved tribute to the State Board of Health. In his annual message he says: "It is my pleasure to call your attention to this important and steadily-growing valuable branch of the State service. During the past two years, under its auspices, there have been organized eighty-two county boards of health, besides securing to each of the large towns in the State an efficient municipal health board, thus bringing the people of the entire State practically under the most intelligent sanitary supervision and administration, which contemplates the remedy, if possible, of all those causes which produce human sickness, and which intensify and facilitate the ravages of all epidemic diseases. Through instructive circulars, which have from time to time been extensively circulated over the State, the State Board of Health has offered to the people valuable suggestions and advice, based upon the latest developments of science, regarding the most approved methods of preventing or restricting the spread of those domestic plagues which in the past have annually left desolate so many homes in Tennessee. Besides which the Board has issued monthly a 'Bulletin' giving the influence of climate upon diseases, together with the prevailing diseases of the State, month by month, and the death-rate per 1000 population so far as under existing law it can do so. In this connection it is not inappropriate to suggest that there is no law in our State now looking to the continuance and proper connection and preservation of the 'vital statistics' of Tennessee. This Board of Health has done, and is calculated to do, much scientific and practical good, and is most efficient as it is now organized."

TOOTH POWDERS.—Prophylactic medicine is of greater value to the public than curative, although they are slow to give it its due; hence the subject of tooth powders may be of some interest. The necessity of keeping the teeth clean, with a view to the prevention of future trouble, is overlooked by too many, even in the higher classes, sometimes from carelessness, sometimes from ignorance. Now, cannot the medical attendant do a great deal to combat this state of things? The dental surgeon is often asked, "How soon should the first tooth-brush be used?" "As soon as there are teeth to use it upon" should be the reply. An ideal tooth powder should be alkaline, since acids dissolve the tooth substance; finely pulverized, that it may not mechanically abrade; antiseptic, to prevent decomposition of food lodged between the teeth, and perhaps to destroy the microbes which are always found choking the tubules of carious dentine; it should contain nothing irritating to the gums; and, lastly, it should be pleasant to the taste, or it will not be used. Fluid dentifrices do not, as a rule, clean the teeth effectually, unless they contain some ingredient which acts upon the enamel itself; and those preparations which are eulogized as making teeth white or preventing the deposit of tartar, should be avoided. Charcoal was at one time a very popular form of dentifrice, and is even now largely used, but from the amount of silica it contains it will rapidly wear away teeth that are not of exceptional hardness; and, moreover, the gums in

some instances become tattooed in a curious manner from absorption of minute particles. Pumice powder, again, is too gritty; and camphorated chalk is said to make the gums spongy. Precipitated chalk forms the best basis for a tooth powder, to the base of which may be added pulv. saponis and ol. eucalypt., a drachm of each; and, if there is no objection to the taste, half a drachm of carbolic acid.—*Lancet*, January 1, 1887.

NECROLOGICAL.—The members of the Council of the New York State Medical Association, while humbly submitting to the decrees of Providence, realize with much grief that the year now closing is made notably sad in the loss by death of so many of their Fellows whose labors have largely contributed to the honor, dignity and usefulness of the medical profession. They now mourn the loss of the second President, Dr. John Perdue Gray, whose aid, wise councils, and personal work have been of such signal service. In common with all the Fellows of the Association, and with the medical profession at large, they sorrow for the death of one who had rendered himself so useful to the State in the guidance of the charitable work in the department of medicine in which he had become a shining light. The Council, therefore, resolved, that the above be published in the forthcoming volume of the Transactions of the Association, and in the medical journals, and that a copy thereof be transmitted to the family of the deceased.

E. D. FERGUSON, Secretary.

January, 1887.

DISINFECTION OF CABS.—At the meeting of the Society of Medical Officers of Health, on Nov. 19, the Council advised the following method of disinfection: The cushion and as much of the internal fittings as are movable should be taken out of the cab and put in a disinfecting oven, where such is available; if there is no disinfecting chamber, the cushions, after having been taken out, if movable, well beaten and dusted, should be replaced, putting them on end so as to expose both surfaces to the action of the chlorine gas which is subsequently used. All exposed woodwork on the inside of the cab should be washed with carbolic acid soap; and carbolized oil should be smeared over the metal work, with the view of disinfecting it, and protecting it from the action of the chlorine. Chlorine gas should be evolved inside the cab, and the cab shut up and kept exposed to the fumes for one hour.—*British Medical Journal*, Jan. 1, 1887.

DR. CHARCOT.—George Augustus Sala says: Dr. Charcot is surely one of the most ingenious of medical mankind. He is a specialist in hysteric and hypnotic cases, and I read that, having satisfied himself as to the practicability of transferring paralysis, nervous contractions, and cataleptic symptoms from one patient to another, he is now about to extend his experiments to hysteric dumbness. "A female patient affected in this manner was placed back to back with a women who had been for a long time cataleptic. By means of the magnet the dumbness was transferred from one patient to the other with the same regularity as marked the experiments in paralysis. By continuing these tests, Dr. Charcot hopes to be able completely to restore speech to tongue-tied patients." The mention of Dr. Charcot's name reminds me that he has written an editorial preface to a book which, artistically, is one of the most extraordinary on which I have ever set my eyes. You know what Sir Charles Bell, what Lebrun, what Darwin and Lavater have done in delineating the passions and emotions of the face; but for a series of terrific pictures illustrating the passions of the body, let me commend you to the "Etudes Cliniques sur l'Hystérie-Epilepsie ou Grand Hysteric," by Dr. Paul Richer, one of Dr. Charcot's pupils. Dr. Richer is an accomplished draughtsman, and his bulky and most appalling volume is embellished with a large number of etchings and woodcuts portraying every conceivable variety of hysterical attitude.

DR. THOMAS E. MCARDLE has been compelled, on account of ill health, to resign the position of Professor of Surgery in the Medical Department of the National University, Washington, D. C., and Dr. Philip T. Harvey, U. S. Army, has been appointed to fill the vacancy.

RUSSIA AND PATENT MEDICINES.—The Russiau Government will prohibit the importation of patent medicines, and the published prohibited list contains more than eight hundred items.

REPORTING OF CONTAGIOUS DISEASES.—The Mayor of Columbus, Ohio, has given notice that for every violation of the law requiring physicians to report contagious diseases he will fine and imprison the offender.

WEEKLY MEDICAL REVIEW.—Dr. B. J. Primm succeeds Dr. Robert Luedeking as associate editor of this journal.

THE BUILDING OF THE COLLEGE OF PHYSICIANS AND SURGEONS, New York, has been sold to an ice-cream firm.

AN ITALIAN HOSPITAL.—The wealthy Italian residents of New York are raising funds for establishing a hospital for Italians.

DR. RAYNER, in the London *Times*, advocates the treatment of mental diseases at general hospitals.

THE UNIVERSITY OF BOLOGNA will celebrate its seventh hundred anniversary in the spring.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 15, 1887, TO JANUARY 21, 1887.

Major W. H. Forwood, Surgeon, ordered for duty at Ft. Meade, Dak. Ter. S. O. 5, Dept. Dak., Jan. 14, 1887.

Major John Brooke, Surgeon, ordered for duty as Post Surgeon at Ft. Monroe, Va. S. O. 10, Div. Atlantic, Jan. 14, 1887.

Major W. H. Gardner, Surgeon, ordered for duty as Post Surgeon at Ft. McHenry, Md. S. O. 10, Div. Atlantic, Jan. 14, 1887.

Major B. F. Pope, Surgeon, ordered for duty at Ft. Clark, Texas. S. O. 15, A. G. O., Jan. 19, 1887.

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ORIGINAL ARTICLES.

FRACTURE OF THE ANATOMICAL NECK OF THE SCAPULA.

BY H. B. HEMENWAY; A.M., M.D.,

OF KALAMAZOO, MICH.

Early in the evening of December 28, 1885, I was called in haste to see Dr. R. J., American, temperate, aged 51 years, lympho-sanguineous temperament, five feet seven inches in height, and weighing 200 pounds. A few minutes before, the doctor had started out of his house to walk down town. He was eating an apple at the time, which perhaps tended to make him more careless. In his right hand he carried a heavy walking-stick. He was hardly off from his front steps before he slipped upon the sidewalk. He tried to regain his equilibrium. After stumbling along a few feet he fell, striking his left arm, just below the shoulder, heavily upon the edge of the raised sidewalk. His body was twisted, for in the fall he hit his head and right hip.

When I arrived at his residence I found him seated in a chair, holding his arm so that the elbow was about five inches from the side of the body. He stated that that was the most comfortable position he had found. Upon removing his clothing it was easy to see that the head of the humerus was absent from its usual place. On account of the thick clothing which he wore at the time of the accident, there was no indication of bruise apparent. I made no measurements, but I thought the injured arm was slightly longer than normal. The acromion and coracoid processes were very prominent. Under them was a cavity. The upper extremity of the humerus did not stand out further than, if as far as, a perpendicular from the tip of the acromion process. I passed my finger down the spine of the scapula without discovering any abnormality. The clavicle was in place and entire. I could feel the head of the humerus in the axilla. There was no tumor under the coracoid process, nor under the spine of the scapula. I could find no crepitus anywhere. Though the elbow did not stand out prominently, and though it could be brought to the chest, I diagnosticated the case as one of simple subglenoid dislocation of the head of the humerus.

I first tried to reduce the dislocation by manipulation, but without success. Since the patient was well and strong and not relaxed by drug or drink, I anticipated some little difficulty in the reduction of the dislocation. I accordingly placed him upon a lounge. To protect him from the cold while we were working at him, I drew his flannel undershirt over the shoulder. I am now sorry that I did this, for it hid the shoulder from view, so that I did not know when the dislocation was reduced.

I next placed my left foot against the side of his chest, below the shoulder, as a counterbrace. I afterwards assisted this foot by grasping the acromion process with the toes of my right foot. First alone, and then with the aid of a neighboring gentleman, I made side extension upon the arm, at right angles to the body. I did not hear nor feel the slightest thud or jerk, so familiar in the reduction of dislocations. Then I changed and put my heel in the axilla. I made downward traction on his arm, and, using my foot as a fulcrum, I passed the lower end of the humerus gently but firmly toward the patient's chest. Again meeting with no apparent success, I announced that I must give an anæsthetic. Before proceeding to do so, however, I examined the shoulder. To my surprise, there was no cavity under the acromion. I removed the covering and made a careful examination of the shoulder, both by touch and sight. I could discover no abnormality of shape or position. Though voluntary motion was in a degree lost, the left arm could be placed in any position into which the right one could. The motions of the arm revealed no sign of fracture. Now, however, I found what I had not found before, namely: that *pressure just below the end of the coracoid process gave crepitus*. Pressure upon the coracoid process did not produce crepitus. I therefore changed my diagnosis from simple dislocation to *fracture of the anatomical neck of the scapula*, and directed that the elbow be bound to the chest and that the forearm be carried in a sling.

That night the arm was not bound to the chest as directed. In the morning the patient found his shoulder not quite so easy, but thought it not strange. He thought in the night during his sleep he turned and lay for a time towards his injured side. He had a dim memory of something of the kind. After getting up he happened to sneeze, and at that time he felt a slight jar of the shoulder. Immediately thereafter his joint became more comfortable. Two days later he had a repetition of the uncomfortable feeling in the morning, relieved by sneezing.

January 14, 1886.—I found some ecchymosis of the left arm and chest. Arm doing well. The head

of the humerus seemed to me a very little forward and below its natural position. No special soreness in the shoulder joint. Pressure towards the body upon the head of the humerus did not produce pain. Pressure below the tip of the coracoid did produce pain. Voluntary motion was returning. The doctor reported that it was improving rapidly. When the elbow was raised to the level of the shoulder, pain was felt along the track of the musculo-spiral nerve.

Fracture of the anatomical neck of the scapula is very rare. Gray, in his "Anatomy," does not mention the possibility. Stephen Smith in his "Operative Surgery," Hamilton in his "Surgery," Ranney in his "Surgical Diagnosis," do not mention it. F. Hamilton, in his work on "Fractures and Dislocations," says that it is very rare. Its existence "uncomplicated by comminuted fracture of the glenoid cavity is denied by Sir Astley Cooper, South, Erichsen, and others." No specimen is in any of the museums of London, and Hamilton has not been able to find one in any of the museums in America. Gross, in his work on "Surgery," says: "It is not improbable that the edges of the glenoid cavity may occasionally be broken off, either by direct force, or by sudden and violent propulsion of the head of the humerus. It is remarkable, however, that the existence of such a lesion has never been demonstrated by dissection." The "International Encyclopædia of Surgery" mentions the case reported by Assaky to the Société Anatomique, in which a stellated fracture of the glenoid cavity was found, but that was accompanied with other fractures.

Such being the opinions of our distinguished surgeons, men recognized as authorities on the subject, it is incumbent upon me to give my reasons for diagnosticating the case as I did. When the accident occurred, I did not think of the case being unique, or I should have called on other surgeons to verify my diagnosis. I give, therefore, my argument.[1]

The case was not one of simple subluxation, because:

1. Before reduction the upper extremity of the humerus, instead of being more prominent, was less prominent. A ruler laid along the external border of the arm, while the elbow was by the side of the chest, would touch the acromion process.
2. Reduction by manipulation did not occur.
3. Crepitus was discovered after reduction.
4. The head of the humerus could be felt in the axilla.
5. There was no "thud" on reduction.

It was not a simple subglenoid luxation of the head of the humerus, because:

1. Crepitus was present.
2. The elbow did not stand out prominently from the thorax, but the axis of the arm was nearly parallel to the chest wall.
3. Of the ease with which it was reduced by traction.
4. Of the absence of the "thud" on reduction.

It was not a subclavicular nor a subcoracoid luxation, because:

1. Crepitus was present.
2. The elbow could touch the chest.
3. The elbow was not drawn backward.
4. It was reduced easily.
5. The arm was slightly lengthened.
6. Communicated motion forwards and outwards was not greatly restricted.
7. The head of the humerus was felt in the axilla, and not under the coracoid process.
8. The coracoid process was prominent.
9. No "thud" was heard or felt on reduction.

It was not a subspinous dislocation, because:

1. There was crepitus.
2. The depth of the shoulder was not increased
3. The tumor was felt in the axilla and not on the scapula.
4. The elbow could touch the chest.
5. No "thud" was heard on reduction.

It was not a fracture of the surgical neck of the scapula, because:

1. The acromion and coracoid processes moved together, with the scapula, and not with the humerus.
2. There was a marked depression and space, between the acromion and coracoid processes above, and the humerus below.
3. I could discover no crepitus before reduction.
4. When reduced there was no great or marked tendency towards a return of the deformity.
5. Pressure on the scapula posteriorly did not produce pain. Nor was the break through the spine of the scapula, for that was entire so far as I could discover by palpation.

It was not a fracture of either the anatomical nor surgical necks of the humerus, because:

1. The limb was lengthened rather than shortened.
2. Movements of the humerus at no time produced crepitus.
3. The acromion was very prominent, and the depression below it deep.
4. Reduction was permanent.

I do not think there was a comminuted fracture of the glenoid cavity, because, in that case, there would be a greater tendency towards the return of the deformity after reduction. With a comminuted fracture of the head of the scapula there would be too little resistance to the sinking in of the head of the humerus. Moreover, pressure from the side upon the shoulder would tend to separate the fragments, and would therefore produce greater pain than was present in this case. The greatest pain upon pressure in this case was caused by pressure backwards just below the coracoid process. Further, in a fracture into the joint, we should expect more indications of synovitis than were present in this case.

The fracture may have entered the glenoid cavity. The slight change in the shape of the shoulder after reduction may be due to such a fracture, but not necessarily so. If the fracture did enter the glenoid cavity I think it must have been a simple fracture, and by far the greatest portion of the head must have been broken off. A study of the shape of the scapula strengthened by the ligaments will indicate that probably if much of the head is broken off, the fracture would be one of the anatomical neck.

[1] This paper was read to the patient, in order to make sure that it contains no errors of fact.

What should we expect to find in a fracture of the anatomical neck of the scapula?

1. There would be downward dislocation, with possibly dislocation either forward or back. This dislocation would be caused by the blow received, and when once displaced the broken bone would catch in the muscles. The coracoid and acromion processes would stand out distinct. There would be a cavity below the acromion.

2. In proportion to the amount of dislocation it would be difficult to obtain crepitus.

3. In so fleshy a man the only way to obtain crepitus would be pressure from in front back, just below the coracoid process, and possibly by pressure from the side on the shoulder.

4. The arm might be slightly lengthened, though not as much so as in the simple subglenoid luxation.

5. Since the humerus would move freely on the broken head of the scapula, and the latter would be caught in the muscular tissues surrounding, movements of the arm would not produce crepitus, and would only produce pain, when it was raised to such a position as would stretch the injured muscles.

6. Since the head of the humerus would not be caught on the edge of the head of the scapula, though the axis of the same might not be parallel to the chest, unlike a subglenoid luxation the elbow might touch the chest.

7. When reduced the abnormality would not show a marked tendency to return. Such a tendency would be in proportion to the obliquity of the fracture.

8. Reduction by manipulation would not occur, but reduction by lateral traction would be comparatively easy, and without a noticeable "thud."

9. The arm would be neither rotated inwardly nor outwardly.

10. The elbow would neither be prominently thrown backward, forward, nor outward; but

11. The arm would be most comfortable with the elbow a few inches from the chest.

12. Paralysis of voluntary motion might be present.

In such an injury, there would remain to hold the bones in place after reduction of the dislocation:

A. To hold the humerus up: 1. The coraco humeral ligament. 2. The deltoid, coraco-bracialis, short head of the biceps, triceps, supra-spinatus, and the superior fibres of the pectoralis major muscles.

B. To prevent backward dislocation: 1. Coraco-humeral ligament. 2. Pectoralis major, and short head of the biceps muscle.

C. To prevent forward dislocation: The latissimus dorsi and scapular muscles.

The points in treatment are: First, reduction by lateral extension. Secondly, to keep the bones in place. The head of the humerus must be kept up, and quiet. To accomplish this the elbow should be bound to the chest, and a bandage should be passed under the elbow and over the shoulder. The bandage around the chest should not extend too high up, as that would tend to crowd the injured pieces together, and cause them to slide on each other. Were I to treat another case I should use an ample axillary pad to act as a fulcrum, and take off the lateral pressure.

Since writing the above I was called in consultation to see another case, the record of which I will here give for comparison:

Late in the evening of August 18, 1886, I was requested by my friend, Dr. W. H. Schaberg, to go with him into the country and see a case of luxation of the shoulder joint.

The patient, Mrs. B., aged 40, was a farmer's wife. Since girlhood she had been subject to epileptic seizures. Six times, during these spells, she had fallen and dislocated her left shoulder. Once, although a physician was promptly summoned, the luxation was not reduced for a week.

Upon this day the family came down to Kalamazoo to visit the Soldiers' and Sailors' Reunion, and to witness a sham battle. The long ride and excitement of the day quite exhausted Mrs. B. After reaching home she was sitting alone in the bed room, getting the baby to sleep in her arms. Hearing a noise, the family ran in and found her lying on the floor. She said that generally she had a little warning, but this time she fell without any premonition. In falling she struck on a crib by the side of her chair.

Upon examination we found a thin, nervous woman, of bilious temperament, and in feeble health. She was quite the opposite of Dr. J. She was seated in a chair. Her left arm hung parallel to her chest, with forearm and elbow supported on a pillow. She said it looked and felt different from other times, but she regarded it as a simple dislocation. All motion, and even the weight of her arm, was very painful. Arm shortened. Acromion prominent, with cavity, though not deep, below it. Elbow could easily touch the chest. With hand on right shoulder elbow touched the chest. The coracoid process moved with the scapula, not with humerus. The acromion was cracked off from the spine of the scapula about an inch and a half from the tip of the process. No unusual point of motion in humerus detected. Could not feel the head of the humerus in the axilla. The pain was intense in the joint only, not in hand. There was very little swelling, though it was then four hours after the accident.

To facilitate examination we administered chloroform. We could not reduce the luxation by manipulation, either before or after using the anæsthetic. Rotation of the arm, when the elbow was raised forward to the level of the shoulder, and the head of the humerus was pressed against the scapula, produced crepitus. Crepitus was not produced by backward pressure below the coracoid process. With very little force I could reduce the luxation by lateral traction with slight rotations, but as soon as I relaxed my hold the luxation returned.

Dr. Schaberg was inclined to think it was a fracture of the anatomical neck of the scapula, with fracture of the acromion process. I diagnosticated it a fracture of the anatomical neck of the humerus, probably impacted, with fracture of the acromion.

The case was treated as above recommended. Three days later we removed bandages and substi-

tuted adhesive plasters, much to the comfort of the patient. Since then I have not seen the patient, but am informed that she made a good, though slow, recovery. Dr. Schaberg tells me that a callus can be easily felt just external to the coracoid process. Deformity is slight, and motion not greatly impaired.

A CASE OF CONCEALED PLACENTAL HÆMORRHAGE

BY VIRGIL McDAVITT, M.D.,

OF QUINCY, ILL.

Mrs. L. T., aged 24, of German descent, and of good form and constitution, having previously borne two healthy children at term, the labors being natural and easy, was badly frightened while driving on August 3, 1886, being then, as she thought, about four months pregnant, and believing that she had repeatedly felt motion in the child. After the ride, although not feeling well, she had no serious symptoms until the forenoon of the next day, when a sense of nausea, faintness, and dull pain in the left side came on, and gradually increased until such alarming prostration occurred that medical aid was sought.

I saw her first at 1 P.M., when her condition was as follows: Very pale and faint; breathing rapid, and anxious; feels as if suffocating; pulse feeble almost to extinction; has a feeling of great distress in left side of abdomen, reaching from crest of ilium to hypochondrium. At this point there is much tenderness to pressure, which increases the distress and faintness. Abdomen generally soft, with some sense of fulness on the left side, as from accumulated fluid. Cannot by palpation make out any uterine tumor.

Per vaginam.—Os high up. No apparent dilatation, no hæmorrhage or discharge of any kind. Beyond the os and cervix cannot detect the expanded body of the uterus, as it should be found at this stage of normal pregnancy. Diagnosis uncertain, but that of concealed hæmorrhage best comports with the conditions of the case; caused either by extra-uterine pregnancy with rupture of cyst, or utero-placental rupture. Treatment: ergot, opiates and astringents, with free alcoholic stimulation, cold, and tight bandaging to the abdomen.

August 4. Still has spells of great faintness and difficult breathing, attended by profound exhaustion. Find more marked sense of fulness in left side. Can not yet make out any definite uterine tumor, or clearly detect the locality of the fœtus, probably on account of the increase of faintness and extreme flaccidity of the tissues. Treatment continued.

August 5. Condition much the same as on yesterday, but the bad symptoms not so extreme. Treatment continued.

The sense of faintness and nausea gradually abated under the influence of occasional doses of bismuth and morphine, added to the specific remedies above stated, and the uterus gradually gathered itself into the hypogastrium about and after the third day, as an indistinctly outlined soft mass, but there was no relish for food, and the sense of faintness attended with nausea, and slight uneasy pains recurring frequently during every twenty-four hours, made the life of the patient miserable and led to a feeling of great insecurity and danger on the part of the physician. The pain had never been severe, but of an uneasy, sinking, unendurable character.

From the first the external os was soft and patulous, so that a finger could easily enter to the depth of the internal os, which was firmly closed. The child, which had shown previous signs of quickening, as the mother thought, was quiescent, and no sign of life could be detected from fœtal motion or heart sound. This condition continued, with occasional aggravations, until about September 12, when the symptoms of nausea, faintness, pallor and indefinable pain, uneasiness and exhaustion, became so much aggravated as to call imperatively for relief for the sake of the mother's safety.

In the meantime there had been perceptible growth in the abdomen, but no definite signs of life in the child could be made out, and at this time again, as at all times since the inception, when there was much faintness, the uterine tumor disappeared to the sense of feeling, and the fœtus, which could now be distinctly located through the exceedingly lax abdominal walls, appeared to wander indifferently about the abdominal cavity, was apparently lying along the right side of the abdomen, reaching high up near to the under surface of the liver.

I requested counsel in the case, which was not secured until the following day, when Dr. G. W. Edison was called, at which time the condition was much the same, viz.: great pallor, pulse very feeble and frequent, frequent faintness and nausea with sickening, sinking pains, and rarely one approaching a labor pain in appearance. Abdomen very much relaxed, child still lying on right side, reaching high up, os patulous externally; internal os closed. It was concluded as best to use ergot and opium in small and frequent doses, hoping gradually to promote uterine action with dilatation of cervix, and thus bring on labor, and also to use alcoholic stimulants very freely. Ext. ergot (Squibbs), gtts. v, tr. opii. deod., gtts. v, were given every two hours.

The day following there appeared to be some relaxation of the internal os, but so much nausea had been caused by the medication that some change in it was demanded, when ext. belladonna and ext. nux vomica, each ½ drop, were added to the dose of medicine, with enough of ess. cinnamon to disguise the disgusting flavor of the ergot. Next day the pulse was better, faintness less, internal os so dilated that two fingers could be passed within the cavity; but the fœtus kept high up, no part presenting at internal os. I endeavored by dilating with the fingers to force labor, but, aside from a few pains induced by the direct irritation, no labor pains followed. Some show of bloody mucus appeared during the day. This general treatment was followed for two or three succeeding days, the condition of the os remaining much the same, no farther dilatation taking place, the show of blood and mucus subsiding, and her general appearance, pulse, color and everything apparently improving, the uterus having resumed its globular form and distinct motion in the fœtus having be-

come manifest, I thought it best to partially suspend the treatment and await the indications of nature.

On making my visit on the morning of September 21 I found that true labor pains had been felt with some regularity during the preceding night, and on examination found the os soft and pliant, the internal os dilated so that two fingers could easily pass and detect a vertex presentation. Everything now indicated a speedy termination of the labor. I left about 8 A.M., with instructions to call me if the pains became frequent or severe. I was called at noon and found the pains recurring every five minutes. Found but little progress in the dilatation of the os, but for the first time the membranes were pouching in the cervix. Waited two hours, and the head not engaging in os, ruptured the membranes to hasten delivery, as the os was dilating so slowly and the woman was much exhausted.

I left her after 3 o'clock until 5 P.M., when labor was found to be making slow progress, the os dilating with provoking deliberation. I again left her at 6 P.M. for an hour, and on returning found some progress made, but the case lingered until 10:15 P.M., when she was delivered of a very small male fœtus. Sexual apparatus very rudimentary. It made occasional respiratory efforts for five or ten minutes, when they ceased. The after-birth was delivered partly by the Créde and partly by the old method, after a delay of twenty-five or thirty minutes. Following its expulsion was much blood, in large clots, which were red and fresh-looking, as having just escaped from the vessels, with a good deal of darker colored fluid blood. There was probably altogether between two and three pints of blood, possibly somewhat more. She was much exhausted during the later hours of labor, but was sustained with wine and the ergot mixture before spoken of. After delivery the uterus showed signs of relaxation, and fearing any additional loss of blood, ice was applied to hypogastrium, with the effect of causing speedy firm contraction. After a few intermittent applications of ice and doses of the ergot mixture and wine, she remained comfortable.

The placenta presented extravasations of dark blood, effused through its meshes, over a large part of its uterine surface, and in some of the sulci, imbedded in the tissue, were seen larger quantities, as though walled within a sinus, through the coats of which it had percolated into the surrounding tissues. The placental tissue was soft and easily broken down, but, except for these extravasations, appeared healthy. The extravasated blood appeared nowhere to pass beyond the thin border surrounding the placenta, none appearing in the layers of the membranes.

The gravity of the symptoms in this case appeared greatly to exceed what might have been supposed to result from the apparent quantity of blood found extravasated within the placental meshes, which was of a decidedly dark color, showing that it was not of recent origin, and was doubtless the result of the first hæmorrhage. The clots of blood passed at the expulsion of the placenta appeared altogether too bright in color to have been cast out of the vessels long anterior to the closing period of labor, and could hardly have contributed to the first serious onset of the trouble seven weeks before. How much of the fluid blood passed at the time of delivery, and which seemed darker, might have been pent up and now first appeared externally, cannot be told, but no place was found upon the surface of the placenta showing marks of long separation from the uterus, and all the abnormal appearance of dark blood about the placenta was that found spread through its tissue and in one or two of the sulci. If the amount of blood lost from the vascular apparatus, and forming the concealed hæmorrhage, was not sufficient to cause the profound symptoms noted as existing in this case, what was the cause? Was it the nervous element of shock? If so, why was it delayed so long after the fright she received, which occurred on the day before my first visit?

Authors tell us that in concealed uterine hæmorrhage the uterus is more *tense;* but here, during the greatest gravity of the symptoms, no uterine body could be felt by most careful palpation, leading at first to the strong suspicion of extra-uterine pregnancy. Nor did the uterus contract so as to be clearly mapped out by the hand, until she had been under the continued influence of ergot and opium, with abundance of alcoholic stimulation, for two days.

This form of hæmorrhage, according to Playfair, is diagnosticated from ordinary syncope by the severity and persistence of the symptoms. Uterine pain, he says, is generally present, of a tearing or stretching character, but true labor pains may be entirely absent. Goodell estimates the mortality in this class of cases at fifty-four in the 106 cases noted. Galabin reports them as extremely rare, only one case of concealed hæmorrhage having occurred in thirty-one cases of puerperal hæmorrhage in the wards of Guy's Hospital. Cazeaux speaks of a class of cases in which the blood is effused into the placental tissues as placental apoplexy, but passes them as cases in which the woman's life is never compromised, but in which the death and premature expulsion of the fœtus is apt to occur. Here, for forty-eight hours, and to a less extent during the interval and including the third day, the woman's life hung as by a thread, requiring the most powerful stimulation, local application of cold, tight abdominal bandaging, and the free use of ergot and opium to save her life, while the fœtus, greatly enfeebled, showed no signs of life until the sixth week from the onset, and at the seventh was born alive, dying within a few minutes because too immature to sustain life.

A CASE OF PYELITIS OF NINETEEN YEARS' DURATION CAUSED BY A RENAL CALCULUS. RECOVERY.

Read before the Chicago Medical Society, January 3, 1887.

BY AUGUSTUS V. PARK, M.D.,

OF CHICAGO.

MEMBER OF THE AMERICAN MEDICAL ASSOCIATION, CHICAGO MEDICO-LEGAL SOCIETY, CHICAGO MEDICAL SOCIETY, ETC.

The case I have to present to the Society is that of William P., aged 30 years; of slight physique, medium height; temperament exceedingly nervous,

disposition retiring. I saw patient first on May 12, 1885; I found him in great agony—indeed his suffering was excruciating in the extreme. I found the temperature 101 F., pulse 120, respiration 20; complained of severe and distressing pain in the region of the left kidney, a dull aching pain in the lumbar region; sometimes the pain would be sharp and stabbing and radiating about in different directions; there was marked gastric irritability, flatulency and indigestion, febrile disturbance nil, obstinate constipation, and copious sweats would accompany the violent paroxysms of pain. Frequently the attacks would be of short duration, again they would come on instantaneously and the suffering would be intense for two days, and these sieges would be so exhausting to the system that it would require several days to regain his accustomed strength and health, which at best, was habitually deranged. I at this time secured the following interesting history of the case.

The patient said the first attack of this kind occured when he was but 11 years old, and it was during a convalescence from scarlet fever. The paroxysms of pain would occasionally be of short duration; usually, however, the suffering would be so great that he would be compelled to keep his bed for a day, or two, then there would be a remission of the paroxysms for a week, and occasionally for a month or two, but the slightest exposure to cold in any way would precipitate an attack. One of the longest sieges, and one which was not entirely unworthy the solicitude of the thoughtful, earnest, skilful physician, was caused by a day's fishing in the rain out at the government pier. His occupation was that of an engineer, and at times when his work was unusually laborious or fatiguing and he exposed himself while covered with perspiration, his old trouble would inevitably follow.

He had received treatment from several of our most successful physicians, and for the past twelve years, the family physician, who during these twelve years had called in a number of our best consulting physicians and surgeons. Microscopic examinations and urinalysis were made time and time again, medicines were given months at a time, and dozens of bottles of proprietary medicines taken without securing the benefit wished, or accomplishing the desired result. During the prolonged attacks, anodynes, hot packs, poultices, and hypodermic medication gave him the most relief, but not infrequently in spite of all medication and the combined skill and associated efforts of the attending physicians, the paroxysms would continue unabated from twenty-four to forty-eight hours. He had become so accustomed to the use of narcotics that it required the administration of almost phenomenal doses to narcotize or produce the constitutional or physiological effect of opium; his long and continued experience with the drug enabled him to say how large the dose and how frequently administered, and the manner it should be exhibited to secure perceptible and satisfactory results.

In all these years of suffering, he had not passed any calculi with his urine. I will modify this by saying, to the best of his knowledge, for he had been instructed by his physician what to look for, and the entire amount of his urine had been saved and examined day after day for weeks at a time and during his prolonged attacks but always with negative results.

After securing the above history, I gave morphia ½ grain hypodermically, pill opii, 1 grain each every two hours if necessary. At this time I made a very careful examination, following the method advised by the late Professor Gross:[1] The concretion, even if comparatively small, as when it does not exceed the volume of a pigeon's egg or an almond may sometimes be readily detected, especially in lean subjects, after thorough evacuation of the bowels, by firmly grasping the lumbar region, immediately below the last rib, with the fingers of one hand resting upon the anterior border of the erector muscle of the spine and making counter-pressure with the thumb, while the fingers of the other hand are passed up and down over the intermediate surface in front. In this way it is very difficult for any hard substance, irregularity of surface or distension from fluid to escape discovery. The patient during the examination, should lie on his back with the limbs well flexed to relax the abdominal muscles; chloroform being given if there is much pain or nervous agitation. The above plan of examining for the stone did not in this case reveal the slightest abnormality and there was but little pain experienced when quite firm pressure was applied over the kidney. I secured all the water he had passed during the previous twelve hours and subjected the same to an analysis, which I will here append. (Urine was of deep red color.) Specific gravity 1.028, of slight acid reaction, blood and albumen was found in small quantities, and a large amount of phosphates and pus a trace. A thorough and careful examination was made and an abundance of mucus corpuscles was found; some pus, but this was slight, however, there was a large quantity of small celled epithelium, (round cells to a large extent), these evidently came from the pelvis of the kidney; no tube casts could be discovered. I therefore hoped that the irritation had not extended into the secretory structure of the kidney proper, but was confined to the pelvis of this organ.

With the knowledge gained by the analysis and the microscope came the pertinent question, What shall I do for my patient? All of the best surgical authorities agree that renal calculi are generally composed of uric acid or oxalate of lime, most commonly the former; they also agree that when the concretion is an oxalate it is usually solitary.

Dr. Harlan N. Orton reported[2] a case of uric acid calculus which appeared to have been dissolved in the pelvis of the kidney by alkaline remedies. I had but little hope to accomplish disintegration of the calculus in this case, for he had taken alkaline remedies for precisely this purpose for months at a time.

Professor W. T. Belfield advises[3] the injection of large quantities of alkaline water. I quote from his admirable paper "Water under the Microscope."

[1] Gross' Surgery, vol. 2, pp. 709–10.
[2] Chicago Medical Journal and Examiner, Oct., 1884.
[3] Water under the Microscope.

In pyelitis, from whatever cause, the injection of such water is an absolute essential in treatment, for there is a tendency to the accumulation of catarrhal products in the pelvis of the kidney, sometimes even causing such obstruction to the escape of the urine as to induce hydronephrosis. Another tendency to be prevented is that toward the precipitation of urinary constitutents upon the inflamed mucous membrane as well as upon the clumps of pus retained in the pelvis. Both of these objects of treatment—the removal of the products of the inflammation and the prevention of the precipitation of salts in the pelvis—are attained by the administration of an abundance of pure water and in no other way. By securing these results we also secure the so-called "soothing" effect of the water, which is really soothing only in a negative sense; the positive benefit consists in the removal of the irritating products. In pyelitis caused by the presence of renal calculi—a frequent form—a pure alkaline water affords the only hope of a radical cure by medical means. Calculi have been disintegrated and even dissolved by the copious ingestion of simple rain water, and the same effects can be achieved in less time by the use of a water which, while not loaded with mineral constituents, contains nevertheless, a sufficient quantity of the proper ingredients to give it an alkaline reaction, for renal calculi are usually composed of uric acid and urates, whose solution is favored by alkalies.

Agnew advises[4] opiates hypodermically or by the bowel, either as enemas or as suppositories in combination with the extract of belladonna and when the paroxysms of pain are exceedingly severe, great relief may be obtained from inhalations of ether. In order that the concretion may be hurried through the ureter more rapidly than would be effected by the peristalsis of the muscular walls, it has been advised to administer largely diuretic remedies in order to excite a free secretion of urine which presses against the obstruction from behind. He says further, that it is quite proper to administer alkaline drinks as solutions of citrate or bicarbonate of potash, but their administration should only be to the extent of moderately stimulating the action of the kidneys, so that the *vis a tergo* should be exerted within the limit of safety; kneading has also been practised; an experiment, to say the least, of doubtful propriety. A fixed position of the body and limbs, by removing the tension of the ureter is favorable to the progress of the stone.

May 13, 5 P.M., twenty-four hours since commencement of attack, I was called to administer morphia hypodermically. I found the patient very weak and his temperature 100 F., pulse 120, respiration 20; his suffering was very great, and he would frequently exclaim: "Oh, father, I wish I could die! I wish my suffering would end; how many more long years must I suffer?"

I had now mapped out a line of treatment and was determined to follow it up thoroughly and faithfully; if I failed I would always have the pleasant satisfaction of knowing I did my best and that too in the light of our present knowledge. All previous attempts to give permanent relief had proven singularly unsuccessful, and show to some extent the utter insufficiency of all human effort, no matter how earnestly or arduously the attending physician applied himself to the inexplicable difficulties; in this case, at best, his efforts were only palliative. I directed patient to drink Waukesha water in as large quantities as he wished and as often as he could, this would quench the thirst, which was constant, acquainting him with the object in view and the diuretic influence of the water. I then wrote for the following:

℞. Tincture digitalis..... ℥ss.
Fluid extract hydrangea..... ʒij.
Elixir calisaya q. s. ad..... ℥iv.
One teaspoonful every five hours.

This was given for its direct effect upon the kidneys and would be soothing to the mucous membrane; advised a milk diet and one-half drachm of Carlsbad sprudel salt in a glass of water before each breakfast to correct constipation.

In order to facilitate the washing-out process to the greatest possible degree, it occurred to me that I should relax the system as much as possible; anodynes were pushed to the fullest extent; hypodermic injections of morphia and atropia given every two hours; large and hot poultices were applied and made to encircle the body about the loins and frequently changed. This treatment, together with the ingestion of large quantities of water, was continued the entire night; the patient directed to lie upon the right side as much as possible with the limbs flexed. At 7 o'clock the following morning, forty-eight hours from onset of attack, the father came to my office with message from patient, "Tell the doctor that I am free from all pain but so weak that I cannot pass my water." I advised the father to have his son make patient trials, and if he failed I would relieve him immediately.

8 A.M.—Temperature 100 F., respiration 18, pulse 90, free from all pain, had passed a large quantity of urine of a dark red color, and with it a calculus which is oval in shape, with numerous little nodules, or hard beadlike elevations which are composed of uric acid. The weight of the calculus was 14 grains. An analysis was made and the calculus found to be composed principally of the oxalate of lime with a small admixture of phosphates; this was but a trace.

My patient, while trying to express his gratitude for services rendered him, made this remark: "I felt a gurgling sensation in my left kidney and in the region of the greatest pain, and with this sensation all my pain ceased and (like Dr. Orton's patient said) he could distinctly feel the stone when it dropped into the bladder."

Patient continued with the Carlsbad sprudel salt before each breakfast, also with the digitalis, hydrangea and calisaya four times a day before the meals; a milk diet and as much of the Arcadian mineral water as he wished; his urine soon commenced to clear up and all kidney troubles ceased. He has had no recurrence since last attack and is now quite robust and strong, at the present time, seventeen months since last attack.

[4] Agnew's Surgery, vol. 2, p. 706.

RECTAL SURGERY MADE SAFE FOR FOOLS.

BY EDMUND ANDREWS, M.D., LL.D.,

PROFESSOR OF CLINICAL SURGERY IN THE CHICAGO MEDICAL COLLEGE.

A few years ago I learned and published the secret method of treating piles employed by certain itinerants. The secret was sold from one quack to another at a high price, and consists generally in the hypodermic injection of various mixtures of carbolic acid. The hopes of many physicians that the method might prove a useful one, were greatly dampened by the discovery of about eighteen deaths out of some 3000 reported cases, and of very alarming symptoms in other instances; in short, it was the same fatal experience as that which previously put a stop to the injection of venous enlargements in other parts of the body.

Of late the Lake States are being treated to a new development; the little itinerant hypodermic syringe has budded and blossomed like Aaron's rod, and evolved little boxes of instruments and little books full of secret instructions, in short, little "systems" of rectal surgery, whereby, as one of the authors says, "*operations which would otherwise be difficult can be accomplished with but little skill.*" The first style of boxes sells at a price varying from a hundred to a hundred and fifty dollars, according to the size of the purchaser's purse and credulity. They generally contain a hypodermic syringe and a rectal speculum, with a probe and a few other simple instruments, having some peculiarities of construction but no special excellence. An equally good set of instruments for the purpose would cost about fourteen dollars at retail, in the ordinary instrument stores.

It is curious to notice the obvious effort to combine a set of instruments in such a way that an ignorant purchaser may accomplish something with them but shall not be able to do much harm. Generally there are no cutting instruments whatever, and the only sharp weapons are the hypodermic syringe and the tenaculum. The chief formula for injection for hæmorrhoids is the following:

℞ Acid carbol..... ℥ j
Ol. olivæ.....fl. ℥ v
Zinci chlorid..... gr. i ℳ

Armed with his little box and book the wayfaring doctor, though a fool, may read and practice, and perchance make money, if the crop of piles is good, although the science of the colleges never glanced upon his calvarium.

Such an easy way to make money soon bred imitations. New boxes and new little books are in the market. Some contain several more instruments than those above mentioned, and yet are sold at half the price, being offered at about fifty dollars. There is, however, the same careful attention to the fact that the purchaser is expected to be such a fool that he cannot be trusted with edge tools, though some of the later boxes contain the little blunt-pointed bistoury of Sims' uterine set, with an edge about half an inch long, for a purpose presently to be mentioned. One set which I examined contained the following instruments:

1. A small rectal speculum.
2. A hypodermic syringe.
3. A tenaculum.
4. A small Sims' uterine knife, blunt pointed, and having an edge five-eighths of an inch long.
5. A Sims' flexible uterine probe, for examining *fistulæ*.
6. A blunt hook to pull down the "pockets" presently to be described.
7. A similar blunt hook with two minute barbs to hold the pocket when it is so shallow as to slip from the smooth hook.
8. A scarifying probe, made so as to scratch the interior walls of a fistula to the depth of about a sixteenth of an inch. By a blundering combination of Greek and Latin in the same word, forbidden by the usages of educated men, it is called a "fistulatome."
9. A flat scoop for clearing out the rectal pockets and pouches.
10. A ligature carrier, to facilitate ligating piles.
11. A three ounce syringe.
12. A hard rubber tube for oiling the anus.

There are no scissors, probably because they could be dangerously used by ignorant purchasers.

The following were some of the printed directions in the box:

"RADICAL CURE OF FISTULA IN ANO.—First trace fistula with flexible probe. Wash out the track with a 5 per cent. solution of 'hydrogen peroxide.' Then inject a 95 per cent. sol. of carbolic acid, plus equal quan. of a 10 per cent. sol. of muriate of cocaine. Draw about 10 to 15 minims in the syringe. Push the flexible needle to the depth of fistula, then inject slowly as you withdraw the needle. Within two hours inject oleum eucalyptus and glycerine, equal parts, and the operation is finished. Keep patient quiet for forty-eight hours."

"HÆMORRHOIDS.—Hæmorrhoidal tumors should be injected with an eight grain sol. of muriate of cocaine, plus an equal volume of 'phenol sodique;' use of the injection from twenty minims to a drachm, according to size of tumor. It is seldom necessary to inject more than once or twice. This injection deposited in two and three drops, making the punctures one inch apart over the rectum, will seldom fail to cure prolapsus of the rectum. Should be repeated two or three times.

"During the treatment of hæmorrhoids or prolapsus, patient should take each night at bed-time a one-eighth grain pill of the solid extract leptandrin, and the parts should be kept anointed with 'ceratum taralinum,' once a day for a week after the operation. After operation on the rectum of a female, the uterus should be dilated, and after like operation on the male rectum, metallic sounds should be passed as large as the urethra will admit; and in all cases where there are *fissures of the anus*, the sphinctors should be forcibly dilated for ten seconds, while patient is under the influence of an anæsthetic.

"With our improved instruments designed expressly for treating the rectum, operations that would otherwise be difficult can be accomplished with but little skill. Our speculum is the only one that is self-retaining, thereby enabling the operator to use both hands, at the same time exposing every part of the

rectum, and not causing the patient great pain by over-distension of the sphinctors."

The "*Phenol Sodique*" is a French name for an article made and sold in Philadelphia. It is simply a solution of impure carbolic acid. The term "*Ceratum Taralinum*" is an ignorant man's effort to construct a Latin name without knowing the language. The article to which it is applied is a blackish, untidy looking *unguentum picis liquidæ*, or tar ointment, but probably not made according to the officinal directions. Druggists inform me that it is sold as a proprietary article under the name "taroid."

A recent addition to these "systems of rectal surgery" consists in exploring the anus for the little pockets in the mucous membrane which exist normally just above the external sphinctor, pulling them down with the blunt hook, and splitting them down with the Sims' knife. Another addition consists in cutting off the little projections, or caruncles, which are often found at the same part, under the preposterous claim that they are very injurious to the patient. The operators call these organs "pockets and fringes."

The possibilities of deception in this field are unlimited, since the patient can neither see the "pockets and fringes" for himself, nor dispute their alleged pestiferous influence. This practice originated in a paper read before a Society of irregulars, entitled "Rectal Pockets and Fringes." That the paper may be properly estimated I will recall to memory here the structure of the lower rectum, as described by authors, both in anatomy and surgery: Morgagni described, what any dissector can see, a reticulated columnar structure of the mucous membrane just above the external sphinctor. These ridges, or "columns of Morgagni," resemble the *columnæ carneæ* of the inner walls of the heart, but are very much smaller. Occasionally a probe will pass behind one of the columns, as under a bridge, but generally they are merely adherent pilasters, or ridges, running longitudinally but somewhat branched. They are described not only by Morgagni, but by "Curling on the Rectum," "Allen's Human Anatomy," "Kelsey on the Rectum," etc. Kelsey says, p. 10: "Between the lower ends of the *columnæ recti* (columns of Morgagni) little arches are stretched, forming pouches. They are more developed in old people, and may retain small pieces of fæces, and give rise to suppuration and abscess."

Curling says, p. 6, that between the lower ends of these *columnæ recti* "the mucous membrane is slightly dilated, variously in different subjects, but in many to such an extent as to form small sacs, or pouches; and in the spaces between them there is a series of short projecting columnar processes about three-eighths of an inch in length."

The latter are analogous to the *carunculæ myrtiformes* of the vagina. The writer of the paper seized on these "pockets and fringes," as he called the pouches and caruncles, and declared that "our current literature contains little or no mention of them." In spite of the fact that they are natural organs, and therefore must have a use, he asserts that "they are more prolific of mischief than you would believe," and that "nowhere, so far as" he is "aware, are they well described or properly noticed," hence he advocates their destruction. The author of this paper, boldly claiming old and well known anatomical facts as almost a new discovery of his own, excited a good deal of controversy among the members of the Society, some supporting his claims and practice, and some roundly denouncing them.

The truth is that these structures are natural, and should be let alone in ordinary cases, but, like other organs, they occasionally become diseased, and require surgical interference. The itinerants, however, have added the "pockets and fringes" to their stock in trade, and believe that whenever they are found the pockets must be split down, and the caruncles, or "fringes," cut off. For this purpose the blunt hooks and the Sims' bistoury have been added to the wonderful little box, which enables them to "accomplish operations with but little skill."

The plan of treating fistulæ by injections of peroxide of hydrogen, followed by other antiseptics, is in principle the same as the iodine method formerly in vogue, which fell into disuse because of its uncertainty. There are no statistics to show whether this modification will do any better, but there can be no harm in trying it. It will probably be found, like the iodine plan, to fail in a large proportion of cases, but yet may sometimes be useful. It is obviously adopted for the itinerants, because their average ignorance is such that it would never do to trust them with the the operation by incision. I shall be glad to receive letters from any physicians who have opportunity to know of the actual results.

No. 6 Sixteenth Street, Chicago.

RECURRENT HÆMORRHAGE INTO THE ANTERIOR CHAMBER.

Read before the Chicago Society of Ophthalmology and Otology, December 14, 1886.

BY BOERNE BETTMANN, M.D.,
OF CHICAGO, ILL.

Cases of concussion of the eyeball with subsequent hæmorrhage into the anterior chamber are not uncommon. Such occurrences are frequently noted in our journals, and are alluded to in text books as uninteresting matters of fact. The case I wish to bring to the Society's notice differs so much from the ordinary ones that its presentation need not be prefaced with an excuse.

On May 19, 1886, Mr. and Mrs. W. hurriedly entered my office with their little daughter Ettie, aged 4. They informed me that the child, whilst playing "Indians" with her comrades, was struck in the left eye by a projectile propelled from a toy gun in the hands of a boy. The projectile was a piece of a twig of a tree, its end was apparently smooth, to judge by the appearance of the contused lid. The stick could not be found. The propelling force was a broad band of rubber kept tense by a wooden trigger. The gun was within a few feet of the eye when the accident occurred, three-quarters of an hour before I saw the patient.

On examination I found the following condition: The upper right lid was œdematous and reddened. On lifting it the eye was found bathed in tears and the conjunctiva slightly injected. Cornea normal. The whole anterior chamber was filled with blood. In the lower part it formed a large clot, concealing the iris from view. The pupil was dilated and elongated in the vertical diameter. An ophthalmoscopic examination could not be made. The child was unable to count fingers close to the eye. I ordered cold compresses and instillation of 2 drops every four hours of a 1 per cent. solution of atropine. When I again saw the child, about three hours later, the pupil was dilated *ad maximum*, and the greater part of the hæmmorrhage was absorbed. Fingers were readily counted.

On the morning of May 20 but a small clot of blood remained in the lower part of the anterior chamber.

At the next visit, May 21, I learned from the mother that the patient had passed a very restless night, occasioned by spells of sudden intense pain. The first attack occurred in the evening. During a momentary absence of the parent, the child left its bed and ran to the window, which it opened. Hearing the mother return it hastily essayed to regain its bed, but stumbled and fell heavily to the floor. The fall was followed by severe pain in the injured eye. A second attack took place at midnight, and a third early in the morning.

I found the eye in a glaucomatous state. Tension + 1, very marked ciliary injection, anterior chamber full of blood. The eye was rebandaged, and cold applications applied over the roller. A 1 per cent. solution of eserine was prescribed, two drops to be instilled into the eye five times a day.

The child was kept quietly in bed. In the evening I found a great improvement. Tension reduced, but still higher than normal. Hæmorrhage mostly absorbed.

At midnight the child was again awakened by the excruciating pain in the left eye.

The morning showed a return of yesterday's condition; extensive hæmorrhage and increased tension. These sudden attacks of severe pain came on without any apparent restlessness on the part of the patient. Whilst in the midst of a sound sleep it would be suddenly awakened by the darting pains.

I hesitated to reinstil the eserine, thinking that the action of the drug favored a separation of the partly healed iris, which I supposed had been lacerated at the lower border, covered by the blood clot. The child had been kept quiet in bed. Both eyes were bandaged for a time; the right one constantly. Coffee and other stimulants were forbidden. In fact, everything had been done to favor a rapid union of the parts. I decided to try the effects of ergot, and ordered the fluid extract to be given in 12-drop doses every three hours, in order to reduce the action of the heart and permit a sufficiently firm organization of the blood clots in the lacerated blood vessels. The introduction of this remedy was soon followed by good effects. The blood disappeared entirely, the pupil remained for a long time elongated, but later on resumed its normal shape.

FRACTURE OF CRANIUM; HERNIA CEREBRI; RECOVERY.

BY WILLIAM HENRY, M.D.,
OF HARMON, ILL.

In June, 1886, my little daughter, aged 8 years, while trying to drive a horse running at large, was kicked on the side of the head, the skull being fractured over the posterior superior portion of the right parietal bone, crushing the bone and driving it in, producing compression of the brain.

I was absent from home at the time, and my friend Dr. Burns was called in; his opinion was that she would not live twelve hours. I was immediately telegraphed for, and on arriving at home in a few hours I found the child in a comatose condition, her pulse regular and about 110. I sent for Dr. Burns, and we soon went to work to remove the compressed bone, but after the removal of seven pieces of bone the comatose condition was not entirely relieved. She remained in a semi-comatose condition for five days.

We found the membranes ruptured in the anterior portion of the fracture, and portions of cerebrum oozing therefrom; in all about half an ounce was lost. The edges of the wound were united with stitches, the antiseptic used being a dilute solution of carbolic acid. In a short time the wound began to suppurate, and then became very much swollen. In the meantime I had returned to my place of business, leaving the patient in charge of Dr. Burns, who sent for me again when this last complication arose. I thought it would be best to open the wound in the lowest portion and let out the pus. On his doing so a considerable amount of pus escaped.

I again returned to my place of business, and in a short time Dr. Burns thought that the swollen condition was increasing, and cut the stitches. This caused the wound to gape open, and there soon appeared a hernia cerebri, about as large as a hen's-egg. Seeing this condition Dr. Burns called in Dr. Helm, of Rockford, and Drs. Donaldson and Herb; but they hesitated to advise active interference during my absence. On my return, in a few days, I found the hernia cerebri still increasing, and after a consultation with Drs. Burns and Donaldson I determined to ligate the tumor at its base. I accordingly tied it with silk ligature, drawing the ligature until the pulsation was almost diminished; and in a few days I again tied it, drawing the ligature until all pulsation ceased. It then began to heal under the ligature as the strangulated portion began to die and dry up; and in about fifteen days the tumor fell off, leaving the wound closed and nicely healed.

Harmon, Ill., Nov. 15, 1886.

MEDICAL PROGRESS.

PEPTONE.—DR. LABASTIDE, in the *Gazette des Hôpitaux*, publishes notes of cases showing the good effects of peptone. The first was that of a widow

over 80 years of age, of robust constitution and sanguine temperament; she had hemiplegia on the right side, and partial aphasia following a cerebral effusion which dated more than thirty years back; all the functions were normal. In the spring of 1884, she had another cerebral attack, but the symptoms disappeared under the influence of internal and external derivatives. In 1885 she had a third attack, which lasted longer than the preceding one; paralysis became more pronounced, aphasia more complete, and deglutition more painful, without any local change in the throat. The patient refused all nourishment. When obliged to take food, either solid or liquid, she immediately vomited it. Pure water, sweetened or aërated, was immediately rejected. At the end of six months the patient was extremely feeble. Dr. Labastide then decided to administer peptone. Injections of 20 grammes of "peptone Dufresne," mixed with 60 grammes of boiled milk, were given, both being occasionally substituted for milk. After twenty days of this regimen the patient had rallied from her state of prostration; her stomach retained water, and even milk, when taken in small doses at long intervals. Twenty grammes of peptone, mixed with a little tapioca, were then ordered three times a day. After fifty days of this treatment, the patient, though still paralyzed, had recovered her former condition, and had even begun to grow stout. At the end of March, however, she succumbed to a fresh cerebral attack. The second case was that of an infant 9 months old, of an extremely feeble constitution. At the cutting of the first tooth symptoms of inflammation of the intestines appeared, together with wasting. Aphthæ of the mouth prevented the child from taking the breast. Dr. Labastide then had recourse to injections of peptone, 10 grammes of which were given with 20 grammes of milk, a drop or two of laudanum being occasionally added. The little patient was nourished in this way for two months, and gradually gained strength. At the end of that time it could take peptone mixed with weak milk, taken from its mother, or tapioca. After five months' treatment all trace of cachexia had disappeared. The third case was that of a child 9 years old, of nervo-lymphatic temperament, and fairly good constitution. It had every symptom of anæmia, pallor, palpitations, headache, enlarged glands in the neck and elsewhere, and exostoses on both tibiæ. No treatment had been of any benefit. Peptone was then administered in doses of one, and, subsequently, two tablespoonfuls. In a few days the tumors on the legs began to disappear, the swelling of the glands diminished, the appetite returned, the little patient recovered his strength and color, and the limbs could be moved without effort. The child no longer suffers from headache or palpitations, and is now completely cured.—*British Medical Journal*, Jan. 1, 1887.

The Treatment of Telangiectasis.—Following the recommendation of an Italian physician, Dr. Böing has treated angiomata with applications of a four per cent. solution of mercurial bichloride in collodium, with remarkably favorable results. The solution is painted over the growth and slightly beyond its margins, in a number of coats, time being given for the evaporation of the ether as shown by the formation of a whitish follicle, before a new coat is applied; the applications are made once a day for four days. He found that the preliminary application of simple collodium to the surrounding sound skin will make the subsequent application of the corrosive solution almost painless, and regards this as a marked improvement on the Italian method. The application having been made, none or slight local inflammatory reaction sets in, a scab forms, this is thrown off in a week, and the remaining ulcer, treated with some simple dressing, heals in one or two weeks, leaving a firm, smooth, white cicatrix, level with the surface, with no tendency to contract and without a trace of the dilated vessels.

He reports five cases in which he made use of this treatment:

1. Boy, æt 7 months, angioma on internal margin of left scapula, 15 mm. by 11 mm., slightly raised; but two applications were necessary.

2. Boy, æt. 9 months, angioma on third dorsal vertebra, 24 mm. by 15 mm., raised 3 mm. above the surface; three applications were made; when the scab came off three-fourths of the growth was found destroyed, but during the process of repair it regained its former size. New applications were made, when the ulcer had healed, and now with complete success.

3. Girl, æt. 2 months, angioma size of 20 pfennig piece in centre of forehead, which had developed rapidly from pin-head to present size; two applications were required.

4. Girl, æt. 6 months, angioma on right labium majus size of 20 pfennig piece; after the first application erysipelatous inflammation of the lesser labium and of the integument of the right groin set in. After the inflammation had subsided, the surrounding skin was thoroughly painted with simple collodium and adhesive strips were laid over the inguinal region. Two applications were made; when the scab dropped off a small dilated vessel was discovered near one margin of the ulcer, and was cauterized with a red-hot knitting needle. The ulcer was dressed with bismuth, and was completely healed in three weeks. In this case there was considerable pain, which was greatly increased by the urine flowing over the sore. The author questions if extirpation with the knife would not be better practice in a similar case.

5. Girl, æt. 3 months, angioma on left parietal bone, size of a mark, of rapid growth; two applications were necessary.

The contraction of the scar being almost nil, Böing believes that this method should be employed in angiomata of the face, but questions if the results will be as brilliant in the large sized angiomata that occur in this region.

The solution is made by dissolving hydrarg. bichlor. 0.4 gms. in collodium 10.0 gms. (grs. vj to ℥ ijss). Sulphuric ether must be kept at hand to wash and preserve the brush.—*Memorabilien*, Hft. 2, 1886.

Muscular Percussion Reflex as a Method of Clinical Investigation.—When the chest wall is

subjected to a tolerably smart blow with the finger or percussion hammer, an elliptical elevation of the surface may frequently be observed for a few moments after the blow. This fact, which has been remarked by Mr. Lawson Tait, Dr. James Ross, of Manchester, and others, has acquired some importance from the somewhat analogous observations of Westphal, Erb, and others on the tendon, osteal, periosteal, and muscular percussion reactions. Quite recently, too, a Russian author, (Dr. V. V. Philipovich, of Odessa), has investigated the conditions under which the phenomenon is produced, showing that it may be made available like other reflexes for diagnostic and clinical purposes. In his observations he made use of a percussion hammer furnished with a spring and index, by means of which the force of each blow was registered. The pectoral regions of 100 presumably healthy young men were examined. The lowest force required to produce the phenomenon —which, by the way, Dr. Philipovich proposes to style "loco-tetanus," instead of "muscular contraction," the term used by Dr. Ross—was 400 grammes, and the highest 2000 grammes. On analyzing the observations, it was evident that the lower degrees of force were invariably sufficient in weakly and ill-formed subjects who had been either permanently or temporarily rejected by the recruiting authorities. Still lower figures were obtained on the examination of diseased persons, the lowest of all being afforded by phthisical patients. In all chest cases it was noticed that the "loco-tetanus" was more easily produced on the side where the disease was situated, or on that where it was the more extensive; thus in a case of dry pleurisy of the right side the figures obtained were—for the sound side, 550 grammes, and for the diseased side 150 grammes. The mean force required in the 100 healthy subjects was 750 grammes on the right side, and 850 grammes on the left; and as the limit of that which could usually be borne painlessly by healthy persons with the instrument used, (the head of which was a metal ball covered with gutta-percha), was about 700 grammes, it may be roughly assumed that if the contraction can be produced by a tap, the force of which is much below that which is sufficient to cause pain in a healthy subject, some pathological condition is probably present, or at least that the general state is below that of a vigorous man.—*Lancet*, Nov. 20, 1886.

DEATH AFTER WASHING OUT THE STOMACH.—At the meeting of the Cambridge Medical Society, on Nov. 5, MR. MARTIN brought forward the case of a patient who was admitted into Addenbrooke's Hospital, under Dr. Bradbury, for stricture of the pylorus. He was 48 years old, and seven years previously had been an in-patient, with symptoms of pyloric ulcer. His stomach was now much dilated, and he suffered from flatulence, vomiting, pain, and increasing weakness. He vomited large quantities of frothy fluid, containing sarcinæ. Ten days after admission, it was decided to wash out the stomach. Soon after passing the tube into the stomach the patient became very faint, so it was withdrawn. About two hours afterwards, he complained of stiffness in the jaws, with inability to open the mouth, and rigidity of the arms, which were strongly pronated and flexed, the thumbs being turned into the palms. He was conscious, and sweating profusely. The rigidity spread to all the muscles of the limbs and trunk, and the temperature rose to 103.4°. He became pulseless and livid, the temperature rising to 107.2° before death, which occurred six and a half hours after washing out the stomach. *Post mortem* examination showed a simple stricture of the pylorus with the scar of an old ulcer, and a much dilated stomach. There was no injury or abrasion of the mucous membrane. The other organs were healthy, and no lesion of the brain was discovered. Mr. Martin said the fatal symptoms very closely resembled tetanus, although no wound of any kind could be found to induce it. The symptoms were not characteristic of strychnine poisoning, and the patient had no opportunity of obtaining any.—*British Medical Journal*, Dec. 11, 1886.

TREATMENT OF WOUNDS OF THE BLADDER.—DR. JOHN HOMANS, Surgeon to the Massachusetts General Hospital, Boston, Mass., writes: "As bearing on the subject of the suprapubic operation for stone, which is being revived at this time, I may say that I have twice cut open the bladder during an ovariotomy. The first time was in my seventy-second case (one of dermoid tumor). The incision in the bladder was carefully sewed up with a continuous suture of silk, care being taken not to include the mucous membrane in the stitch. The bladder was closed tight, and a Sims catheter was kept in the urethra. The catheter was removed on the tenth day. The temperature was never above 99°, and there have never been any vesical symptoms at that time nor since. The second time was in my two hundred and tenth case—one of double papillomatous ovaries, the patient having been tapped eighteen times in five years for the removal of ascitic fluid. The wound of the bladder was more extensive than in the first case, and required twelve interrupted sutures of silk, in which the peritoneal and muscular coats alone were included. A catheter was kept in the bladder seven days. After that time the urine passed naturally. In neither of these cases was the bladder drained through the abdominal wound. If the catheter in the urethra will drain the bladder, it would seem unnecessary to have another exit in the roof of the bladder. It would be well, however, to leave a drainage tube in the integuments over the sewn-up bladder in case there should be any leakage." *Medical Record*, Jan. 15, 1887.

AN APPLICATION FOR PAINFUL DENTAL CARIES.—A contributor to the *Union Médicale* gives the following formula:

Dry alcohol extract of opium	1 part.
Camphor	1 part.
Peruvian balsam	1 parts.
Mastic	2 parts.
Chloroform	20 parts.

A pellet of cotton soaked in the solution to be introduced into the cavity.—*N. Y. Medical Journal*, Dec. 11, 1886.

THE
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PUBLISHED WEEKLY.

The Editor of this Journal would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, FEBRUARY 5, 1887.

RUPTURE OF THE URINARY BLADDER.

In the *Lancet*, of Dec. 11, 1886, Sir William MacCormac records the recovery of two cases of intra-peritoneal rupture of the bladder—the first positive record, we believe, of recovery from this accident, after operation. In these cases abdominal section was performed very soon after the patients were admitted to St. Thomas's Hospital, and the rent in the bladder exposed and carefully closed by numerous interrupted silk sutures; after which the peritoneal cavity was washed out with warm boracic acid solution, and the external wound closed. As the rarity and almost inevitable fatality of the operation are well known, it may be interesting to examine more closely the records of the two cases, and the remarks of the distinguished surgeon under whose care they recovered, as there is considerable diversity in the treatment recommended in such cases. Catheterism, simply, has been practised, or washing out the peritoneal cavity from the side of the perineum or urethra; median or lateral cystotomy has been done to give direct drainage through the perineum; in some cases aspiration of the abdominal cavity, abdominal section, sponging out the blood and urine, and leaving the rent undisturbed, have been done; and abdominal section, with suture of the rent, either completely or leaving the anterior part unclosed, or making an opening for drainage in the part of the bladder uncovered by peritoneum, has been done.

The first case recorded by Sir William MacCormac is that of a man, aged 33, who ran against a post, which struck him in the region of the umbilicus. He was admitted to the hospital fifteen and a half hours after the accident, having walked a distance of about a mile, unaided. There was complete inability to pass urine; no symptoms of shock; abdomen distended and tender all over, but especially in the epigastric and hypogastric regions, resonant anteriorly with dulness in both flanks, varying with the position of the patient. Ninety-five ounces of a slightly red colored fluid were drawn off, and the bladder was shown to be firmly contracted by its grasping the catheter, which did not move freely. The level of dulness in the flanks was now sensibly diminished, and taking the symptoms into account, intra-peritoneal rupture of the bladder was diagnosticated.

The operation was performed about twenty hours after the receipt of the injury. The bladder was found empty, and firmly contracted. "The rent was in the posterior aspect of the bladder, and extended from the superior fundus to the recto-vesical cul de-sac; it was median and vertical, and as nearly as may be four inches in length. The edges were rather irregular and thickened. So deeply did the rupture extend into the pelvis that great difficulty was afterwards experienced in the introduction of the deeper sutures. To facilitate this the parietal peritoneum was divided transversely on each side, and it was then found possible to draw the bladder much further out. The intestines were pushed back with sponges held by one assistant, while a second pulled the bladder forward. Sixteen sutures of fine silk were then introduced after Lembert's method, including the serous and muscular coats only, at intervals of about a quarter of an inch, beginning at the lower part, and the first and last sutures were introduced quite beyond the limits of the injury. The edges of the mucous membrane were thus thoroughly inverted and the serous surfaces brought into contact. Wherever the closure did not seem absolutely complete and perfect, catgut sutures were introduced to the number of six or eight between the silk ones, including the peritoneum only. The bladder was now twice moderately distended with a weak solution of boric acid injected through the catheter by a Higginson's syringe, and proved perfectly watertight. The peritoneal cavity was finally irrigated with two gallons of a 1 per cent. solution of boric acid dissolved in water previously boiled and cooled down to a temperature of 98° F. The fluid was introduced by means of a tube attached to an irrigating can raised 8 ft. from the floor. It overflowed into a macintosh and thence to a tube placed at the foot of the table, in the manner customary during ovariotomy. The irrigation was continued until the

escaping fluid became absolutely clear. There was no sponging of the peritoneum. A glass drainage-tube was introduced from the centre of the wound to the recto-vesical cul-de-sac. The edges of the peritoneum and external wound were then closed by deep silk sutures, and iodoform, iodoform gauze, and salicylic wool applied, with bandages of carbolic gauze. A soft black catheter was fastened in the urethra, the tip only projecting into the bladder. The operation lasted two hours, and was conducted under the carbolic spray throughout, save for a few minutes when the steam failed. The peritoneum and intestines looked quite healthy, presenting a polished appearance, apparently not injected. No blood-clots were observed." There was no sickness after the operation, and all pain and tenderness disappeared almost completely after it. Within the next five days the temperature did not reach 100° F. From 30 to 40 ounces of urine were passed daily, being drawn every four hours, but containing no blood. On the third day, the catheter was removed, after which he passed urine naturally. The drain was removed on the fourth day, a small amount of serous discharge being sucked out at each dressing. The sutures were removed on the eighth day, and within a fortnight the abdominal wound had cicatrised. In three weeks he was able to get up.

The second case was more obscure at first than the one just mentioned. He came to the hospital immediately after a fall, but no symptoms directing attention to the bladder were observed by a most careful house-surgeon. A catheter was not passed, as there was no desire to urinate, and urine had been passed an hour before. There were no symptoms referable to the bladder until about seven hours after the accident, when he desired to pass urine but was unable to do so. He was re-admitted to the hospital about twenty-four hours after the fall, the symptoms rapidly increasing in severity. Three ounces of dark-colored bloody urine and clots were drawn off; and the symptoms were such that intra-peritoneal rupture of the bladder was diagnosticated, and an immediate operation determined upon.

The operation was performed about twenty-seven hours after the accident. After reaching the peritoneal cavity, and introducing the finger, the rent in the bladder was at once detected. "The bladder was now drawn forwards, a transverse incision of the peritoneum of half an inch being made on each side. An irregular obliquely placed rent in the bladder was then clearly exposed, situated at the upper and posterior part, and slightly to the left of the middle line; it was much more extensive in the outer than in the inner wall, measuring two inches in length where the peritoneal covering and muscular coat were ruptured, and a quarter of an inch where the internal coat was torn. A blunt director passed into the wound came into contact with the catheter previously introduced. The rent in the bladder was closed by twelve fine silk sutures, rather less than a quarter of an inch apart; the ends were cut short. Each suture was passed by means of an ordinary fine curved needle introduced about a quarter of an inch distant from the margin. The first and last pairs of sutures were passed through the bladder wall completely beyond the limits of the rent, so as to prevent the possibility of leakage from its extremities. On drawing the sutures tight, the closure of the rent seemed so complete and secure that no additional ones through the peritoneal coat appeared necessary. The bladder was then fully distended by injecting nine ounces of a warm boracic acid solution through the catheter, and found to be perfectly watertight. The abdominal cavity was thoroughly washed out with about two gallons of a 1 per cent. solution of boracic acid warmed to a temperature of 98°. The irrigator consisted of a large glass vessel raised four feet above the patient's abdomen, with a long India rubber tube and glass nozzle attached. At first the fluid flowed out slightly tinged with blood; subsequently it became quite clear. There were no clots. Before the external wound was closed as much of the residual fluid as possible was expressed. No signs of inflammation could be detected in the peritoneum where it was exposed during the operation. The intestinal coats were free from injection; there was no adhesion or lymph visible. No vessels of importance were divided in the external wound, and all bleeding points were secured as they appeared, catgut ligatures being used. A suture was passed on each side, uniting the transversely divided edges of the peritoneum, and the abdominal wound and peritoneum were then united by eight stout silk sutures passed through the whole thickness of the abdominal wall. No drainage-tube was inserted in the peritoneal cavity, nor was a permanent catheter passed into the bladder, confidence being felt in the effective and complete manner in which the rent in the bladder was closed. A small, short drain was, however, inserted in the lower part of the external wound. Just before the dressings were applied, a fit of vomiting came on. There was severe abdominal strain and a certain quantity of boracic fluid was forced up between the sutures. The patient's pulse kept good, and the respiration was quiet and easy, except for a minute or two while the abdominal

cavity was being washed out. Iodoform was powdered over the abdomen and groins. Iodoform gauze and salicylic wool were applied to the wound and kept in position by carbolic gauze and flannel bandages. The patient was lifted into bed and a pillow placed beneath his knees. A half-grain morphia suppository was introduced into the rectum. Before removal from the table the bladder was ascertained to be empty and the catheter was withdrawn." This patient recovered even more rapidly than the first. The external wound was united throughout a week after the operation; on the twelfth day he was allowed to sit up; and a fortnight after the operation he was regarded as entirely well.

As with all operations on the abdominal cavity, the success of this one depends on matters of detail; and of these the matter of suturing is probably most important. "The accurate and complete suture of the bladder wound by sutures inserted through the whole thickness of the serous and muscular coats, carefully avoiding the mucous coats, is of the greatest importance. The serous surfaces should be inverted, brought into close contact, and the first and last stitches inserted quite beyond the extremities of the wound, so that leakage at either angle, the most common places for it to occur, may be rendered impossible." Znamensky, Maksimow and Vincent have shown that this is of the utmost importance. The double row of sutures recommended by Vincent—one sero-muscular, the other serous—cannot be said to be safe or necessary, as the serous sutures invariably give away. Znemansky, Petersen and Vincent think the interrupted silk suture the best method and material. The continuous suture is undesirable, and possibly dangerous. Carbolized (or disinfected) silk is probably the safest material, and they may be left without risk if the operation be properly performed —aseptically. A rectal tampon may probably render the deep stitches easier of introduction. A free abdominal incision is important, as will be readily seen, for proper inspection, for the introduction of sutures, for necessary manipulations, for the control of the intestines, and for the thorough cleansing of the abdominal cavity. "If the deeper structures be first divided near the pubes, the anterior surface of the bladder can be exposed and examined before opening the peritoneal cavity. If a rent be found there it may be unnecessary to proceed further; otherwise the serous cavity can be laid open and the upper and posterior surface of the bladder laid bare. No other manner of treatment seems likely to prove of real avail in rupture of the bladder. Lastly, great importance must be attached to the thorough washing out of the peritoneal cavity. The urine and bloody serum penetrate everywhere. Wegner's experiments prove that extravasated urine does not merely gravitate, but that peristaltic movements of the bowel speedily distribute the fluid over the entire peritoneal surface. A 1 per cent. boric acid solution dissolved in previously boiled water and cooled to a temperature of 98° F. seems well adapted for the purpose, or water simply boiled can be used."

There is but little room for a discussion of the question of diagnosis in cases of suspected rupture of the bladder. In the majority of cases the symptoms and history will usually enable the surgeon to diagnosticate the injury. But even with an uncertain diagnosis it is both safe and justifiable to make an exploratory laparotomy. "If this be done early enough, it will prove successful in uncomplicated cases, while the operation in itself scarcely aggravates the patient's condition, and is surely better than a hesitating, halting practice in expectation of improvement, which usually never takes place."

CHOLERA IN SOUTH AMERICA.

It appears from despatches furnished by the United States Minister at Buenos Ayres, and published in the weekly abstract of sanitary reports issued from the office of the Supervising Surgeon-General of the U. S. Marine Hospital Service, Washington, D. C., January 27, 1887, that about the first of November, 1886, the Italian ship "Perseo," plying between Genoa and Buenos Ayres, arrived at the latter place infected with cholera, several deaths from the disease having occurred during the voyage. Before the facts were made known, the ship had landed many passengers at the *Boca*, a low, filthy dock below the level of the river Platte, and then proceeded to Rosario, on the Pasaka river, 200 miles distant, where she discharged the remainder of her passengers and cargo. Cases of cholera occurred soon after the landing of the ship "Perseo," both at the Boca port and at Rosario, and continued to spread more or less at both places.

During November, the number of cases reported at the Cholera Hospital at Buenos Ayres was 200, of whom 93 died, 34 recovered and 73 remained under treatment, on December 3. Of the 200 patients, 130 were from the male and female lunatic asylums, 12 from a prison, leaving but 58 cases as having occurred in the general city population during the month. During the same month, in the smaller city of Rosario, having a population of about 50,000, more than 200 cases were reported, more than half of which died. One week later news from the United States Consul at

Buenos Ayres, December 10, says: "While a few cases of cholera are still reported in each day's bulletin, the disease appears to have pretty much run its course at this port." In regard to other places the same authority says: "On the 4th of December there were 13 deaths at Rosario and 14 new cases, and at Cordoba 2 deaths and 5 new cases." It is stated that a few cases have occurred at several small places outside of the cities named, but on the whole the disease is declining. At Buenos Ayres the health authorities appear to have adopted very efficient and energetic sanitary measures for preventing the spread of the disease, and thus far with encouraging success, and the alarm at first created has greatly subsided, but still the greatest vigilance is exercised to prevent the further spread of the disease in any direction.

LARGE CEREBRAL TUMOR.—DR. WM. S. ROBERTSON, late Professor of Practice of Medicine in the Medical Department of the Iowa University, died at his home in Muscatine, Iowa, on the 20th of January, 1887, aged 56 years. He had suffered several months from paralysis and symptoms of cerebral disease, ending in complete coma forty-eight hours before death. We are informed that a post-mortem examination "revealed a tumor in the right cerebrum, extending from above downward and slightly backward about three inches, and from before backward two inches," as the evident cause of the symptoms and the fatal result.

SOCIETY PROCEEDINGS.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, January 6, 1887.

THE PRESIDENT, B. F. BAER, M.D., IN THE CHAIR.

W. H. H. GITHENS, M.D., SECRETARY.

The Secretary read

A REPORT OF 616 CASES OF LABOR IN PRIVATE PRACTICE BY DR. H. H. WHITCOMB,

of Norristown. Up to March 31, 1886, I had attended 616 cases of obstetrics. I have had no death of a mother and only two still born children; one of of these was destroyed by craniotomy. The forceps have been used in two cases only. I have had no case of twins. I have had one case of elbow presentation, one shoulder, one a hand and face, and three breech presentations; all the others were by the vertex. Placenta prævia was present in two cases at full term and in two miscarriages, one at seven and one at five months. A series of thirty-two cases of puerperal fever, but fortunately without a single death, followed me in the winter and spring of 1882. The first case occurred after I was in attendance on a case of scarlet fever, and was followed by three other cases; the next two or three obstetric patients escaped, when I was called to see a woman who was confined while convalescent from erysipelas. The fever developed in her, and then every case I attended that winter and spring suffered from it. Consultation confirmed the diagnosis in all cases. One instance was after a miscarriage at seven months following pneumonia. The patient had a tedious convalescence, but has since had a child weighing 13½ pounds. I tried to stop attendance on this class of patients, but could not get rid of them. The epidemic ceased as suddenly as it commenced, and I have not had a case since. The smallest child delivered at full term weighed three pounds and lived only three days. Three deaths of infants have occurred from trismus, and four deaths, in children a few days old, for which I was unable to assign a cause. They simply moaned until they died, while they appeared to be in good condition. I had one case of hour-glass contraction and four of severe post-partum hæmorrhage at term.

My success I ascribe to patient waiting and conservatism. I do as little meddling as possible, and do not use antiseptic injections. The credit is partly due to my old teacher, Prof. Penrose, who is a safe guide to follow. I owe much to his careful instruction. I see so many doctors who, in almost every case of obstetrics they get, if they arrive before the child is born, put on the forceps to "hasten delivery and shorten the woman's suffering." I am very positive that this frequent use of the forceps is abuse. I have had a number, possibly twelve, of ruptured perineums; they were immediately stitched with a perfect result in all cases. I have never had a vesico vaginal fistula, although one of our teachers would impress his classes with the idea that these cases occur in the hands of the country practitioner. I might say the only cases I have ever seen were those in the care of city doctors.

DR. H. A. KELLY remarked that Dr. Whitcomb's report was full of interest, and in criticising the observer must be careful not to impose the rules and statistics of an average Philadelphia practice upon the Norristown people. While it is true that ailing, delicate women live and require obstetrical services in Norristown, as elsewhere, yet it is a fact that in Philadelphia the up-town mill population, from all over the civilized world, and the down-town population of pampered society women and alley offscourings, present very different problems to the accoucheur.

With notable exceptions labor in the country is *easier*. Differences of the same kind in greater degree exist between our native and the foreign population. I was much struck with this fact this summer when I went to the Anatomical Institute in Leipsic, to Herr Dornfelder, to buy a normal female pelvis. I was going to Berlin to return in a month, and instructed him to find a pelvis as near a normal specimen in the museum as he could, in the large amount of material passing weekly through the Institute. On

my return he gave me a specimen I now have in my office, which was the nearest to the normal he was able to find; and he assured me that a normal pelvis was rare. This dried pelvis with artificial ligaments measures: Sp. I, 25½ ctm.; Cr. I, 29½ ctm.; Cr., 9 ctm.; Dr., 13 ctm. The argument as to different necessities in different localities holds with regard to the use of antiseptics.

Dr. Wm. Goodell read a paper entitled

A YEAR'S WORK IN OVARIOTOMY.

In it he stated that he had had during the past year fifty-nine laparotomies, but that, lest his paper should be too long, he should limit himself to the consideration of his ovariotomy cases. Of these he had had thirty-nine cases with three deaths.

Of these deaths one occurred on the table from the difficulties of the operation. It was a dreadful case of intra-ligamentous cyst with universal adhesions, from which it was shelled out without a pedicle. The ureter had to be dissected out for twelve inches, and the entire colon, womb, bladder and small intestines were attached to the cyst It was a very forlorn case from the start, and he operated merely from a sense of duty. He stated that in the removal of intra-ligamentous cysts the ureter is in great danger, and he believed that it had been repeatedly torn across without the knowledge of the surgeon. Dr. Goodell stated that before the death of this case, he had had in succession twenty-two successful cases, and afterwards a series of eight cases before the next death took place—viz., thirty-one cases with one death. The second death was due to obstruction of the bowels in a case of large fibroid of the womb and ovarian cyst weighing sixteen pounds. On account of the fibroid both ovaries were removed. He had had his share of cases of obstruction, but this was the first fatal one in his recollection. The remedies that he used were calomel and belladonna by the mouth, and turpentine by the rectum. The obstruction is due to the adhesion of a knuckle of intestine either to the stump of the pedicle, to the abdominal wound, or to some denuded surface. As soon as symptoms of obstruction presented themselves, he always aimed at once to open the bowels.

The third death occurred in a case of malignant cystic disease of both ovaries, in which the operation was incomplete. Malignancy had been suspected, but the operation was forced on him on account of the excessive pain from which the woman suffered. Yet he argued, from his own experience and that of Schroeder and Martin that, other things being equal, it was always wise to remove ovarian cysts even when malignant, for patients' lives would be greatly prolonged by the operation.

The right ovarian cyst had no pedicle, but ended in a brittle cancerous mass as large as his fist. This, with very great difficulty, was ligated *en masse*, and then bleeding vessels were secured separately. The left ovarian cyst was so fastened to the womb, pelvis and broad masses of cancerous excrescences that he did not attempt to remove it. He would have abandoned the case after he had discovered the nature of the complications, but he had gone too far to recede, for his hand had been inside of the right cyst to break up its septa, and blood was flowing profusely from it. The lady died twenty-six hours later from shock and hæmorrhage.

He stated that some ovariotomists do not report their incomplete operations or their exploratory incisions, but that he thought it fairer to do so. If his memory served him no trick, this was the only incomplete operation for ovarian cyst that he had ever had. None of his cases had been selected, and he had refused to operate in one case only, and that one on account of epithelial cancer of the cervix; so that he did not have any exploratory incisions to report. He had twenty-one cases of adhesions; a very large proportion of which he attributed to the tendency women in this country have of postponing the day of operation. He also had had twenty cases of double ovariotomy; but this large number was due to his rule of removing the second ovary in all malignant or suspicious cases, in all cases which have passed the climacteric, in all cases of incipient disease, and always when asked by the patient to do so. He further stated that he still adhered to Listerism, and that he used Keith's dressing of one part carbolic acid to seven of glycerine.

Dr. Parish cited a few instances of evil results following abdominal tapping for purposes of diagnosis or for relief from distension. In his first ovariotomy case, with the view of clinching the diagnosis, he aspirated and withdrew a few drachms of somewhat cloudy ovarian fluid. The patient presented some symptoms which in a few days became grave; pain in the tumor, rigors, rapid and feeble pulse and high temperature. I operated during the existence of these symptoms, and found suppuration of the interior of the cyst and extensive anterior adhesions; both conditions doubtless dependent upon the aspiration. The patient recovered.

A few years ago a well known medical gentleman of this city aspirated a tumor supposed to be a multilocular ovarian cyst. Though the fluid was stated to verify the diagnosis, the patient miscarried in one or two days of twins at about the fifth month, and the tumor proved to be simply a uterus enlarged by reason of a multiple pregnancy.

I have recently seen in the Philadelphia Hospital a shocking case of labor, in which active labor pains began one week previous to her admission to the hospital. No urine had been voided for several days. Pregnancy was denied by the patient and her friends, and was not recognized by two physicians. The woman was small and deformed, and in the abdomen were two fluctuating tumors, one due to a distended bladder, the other the uterus. Aspiration was resorted to in both tumors, a procedure that was not only unnecessary for diagnostic purposes in this case, but which would probably have been highly detrimental to the patient, had not the neglected and protracted labor already determined a rapidly fatal result. Though tapping for relief and especially for diagnosis is less frequently resorted to than was the case a few years ago, yet even now it is too frequently done.

In reference to the development of cancer or sar-

coma after the removal of seemingly benign ovarian tumors, I have seen recently an example in a patient operated on by Dr. Hickman and myself. A large cyst of one ovary and a small one of the other, both free from the appearance of malignancy, were removed, and the patient made a tardy recovery. In about a year sarcomatous growths developed in the neck and axilla, and a large one in the abdominal wall of the left lumbar region. The patient died a few weeks ago, and the autopsy was made by Dr. Morris Longstreth, and though the sarcomas referred to were present, there was not intra-pelvic disease. An interesting feature was the total disappearance of the ligature of iron-dyed silk with which the pedicles and several vessels were secured about eighteen months previously.

DR. H. A. KELLY stated that while simply tapping often was in no way injurious, it was also often productive of grave injury, and one of his own cases illustrated this point very well. The patient, having a cyst weighing 100 pounds, was tapped in the left iliac region by a notorious homœopathic surgeon. She had previously suffered from pressure symptoms. From now on she suffered from severe inflammatory pains around the puncture, and at the operation the extensive dense adhesions at this point constituted the chief difficulty. She is now well, more than a year since the operation.

It is a cause for mutual congratulations for American operators, that their results are becoming so good. The whole credit of this lies in the thorough use of antiseptic agents and the rendering the field of operation completely *aseptic*.

He believes, too, that our cases at home are more difficult than those now being operated on abroad. The tumors we operate upon are older, and with the increasing age of an ovarian tumor occur many changes detrimental to the patient, depression of vitality from pressure symptoms, diversion of so much albumen from the system at large, surcharge of the emunctories, as well as adhesions and unfavorable changes within the tumor itself. Keith's dressing, of a strong carbolized glycerine, has rendered excellent results in my hands in at least twenty cases.

DR. GOODELL, in answer to a question by Dr. Baer, said he operated during menstruation merely from pressure of time on the part of the patient, and little or no effect was produced on the discharge by the operation.

DR. JOS. PRICE, in commenting upon some points alluded to in Dr. Goodell's paper, fearing the contaminated atmosphere of a general hospital, cited the statistics of two hospitals: Special Department of Birmingham General Hospital and Birmingham Hospital for Women, covering a period from January, 1878, to September, 1885:

Special Dep't of General Hospital—Ovariotomy, 35 cases, 11 deaths; 31.4 per cent.

Birmingham Hospital for Women—Ovariotomy, 268 cases, 19 deaths; 7.1 per cent.

During the same period the total number of intra-abdominal operations in the

Special Dep't of General Hospital—85 cases, with 21 deaths; mortality, 24.7 per cent.

Birmingham Hospital for Women—632 cases, with 49 deaths; mortality, 7.7 per cent.

One point as to the value of the spray, quoting from Keith's report of cases treated in the Royal Infirmary, Edinburgh.

Carbolic acid spray cases:

Ovariotomy, 21 cases, 18 cured, 3 died.
Hysterectomy for fibroid, 2 cases, 2 cured.
Battey's operation, 1 case, 1 died.

Twenty-four cases with 4 deaths; 16.66 per cent.

Boro-glyceride spray cases:

Double ovariotomy with hysterectomy, 1 case, died.
Hysterectomy for fibroid, 1 case, recovered.

Result with boro-glyceride spray: Two cases, with one death.

No spray:

Ovariotomy, 47 cases, 46 cured, 1 died.
Hysterectomy for fibroid, 7 cases, 7 cured.
Battey's operation for fibroid, 1 case, 1 cured.
Interstitial pregnancy, 1 case, 1 cured.

Fifty-six cases with one death.

Mr. Keith says: "No cases of serous cysts of the broad ligament were operated on. These all were treated by tapping, and none of them have returned." One such case that Dr. Price saw died a few days later. Of Dr. Keith's cases, one-half had no adhesions.

DR. MONTGOMERY expressed pleasure at hearing Dr. Goodell's details and success, and considered his success gratifying, especially after tapping. A patient came to him one month after tapping. She had a high pulse, septicæmia, large adhesions to viscera, etc., putrid clots in the tumor, and died on the fifth day with a temperature of 105°. He does not approve of tapping broad ligament cysts. One patient with such a tumor was tapped seven times. He afterwards removed the tumor, and did not have a single vessel to tie. In this case the peritoneum had been pushed up by the tumor and was not opened until late in the operation.

DR. GOODELL made a few remarks on the subject of statistics. Dr. Keith's have improved, not because he has given up the spray, but because he has grown to his work. Dr. Goodell will give up the spray because it is an intolerable nuisance. As to the question of malignancy of ovarian tumors, it has been said that "all ovarian tumors are malignant and should be so treated." This is too sweeping; but the tumor should in all cases be removed as soon as possible, as soon as it is discovered.

DR. R. P. HARRIS desired DR. Parish to report the present condition of the patient from whom he had removed the ovarian tumor exhibited by him before the Society, at its meeting on March 4, 1886, the day after the operation. Dr. Parish requested Dr. Harris, who had seen her much more recently than he had, to report her condition. Dr. Harris stated that notwithstanding the fact that the tumor was largely solid; that it had grown rapidly; that the solid portion had an appearance of malignancy; and that there was a small morbid growth projecting upward from the fundus uteri, the lady was to all appearance a well woman. He saw her on December 26, when she claimed to have perfectly recovered her

health and strength after a very prolonged convalescence. Her appearance and activity certainly indicated that her statement was correct. The uterine nodule must have been a fibroid, as, had it been cancerous, it must have materially developed in nine months. The future of this case will be of much interest.

Dr. Chas. Meigs Wilson reported

THREE SUCCESSFUL TAIT OPERATIONS.

These cases are the first of a series performed without the use of carbolic acid solutions for instruments, and without the spray. Hydrant water boiled for six hours was used for the instruments and sponges in the first and second cases, and a solution of mercuric chloride, 1 to 8000, for like purposes in the third. The wounds in all three were dressed after the manner of Keith. The incisions were less than two inches in length. More than three months has elapsed since the operation in each case before it has been reported. It has seemed best to publish the cases in this manner, because the vast majority of all cases recover without accident from the operation, and hence mere statistics of the healing of the wound amount to little but evidence of individual skill. Statistics of the real relief afforded by the operation is what the profession needs in order to give the operation its just place in modern surgical procedures.

Case 1. Myo-Fibroma of the Uterus.—This case first came under observation in July, 1886. She gave her history as follows: Mrs. McM., æt. 32, multipara. For the last sixteen months has had a rapidly growing tumor of the abdomen, menses profuse, catamenial intervals ten to fifteen days; for the past four months has been rarely free from bloody vaginal discharge. She was emaciated and anæmic.

She was very nervous and alarmed about the constant bloody discharge. She had reflex pains, but no ovarian tenderness or pain. She was obstinately constipated, owing to the pressure of the tumor upon the rectum. She was found to have a large fibroid tumor of the fundus and anterior wall of the uterus. The enlarged uterus was incarcerated in the cavity of the pelvis and was very immobile. The sound entered the uterus 7¼ inches. Abdominal section was performed September 20, 1886, with assistance of Drs. E. Wilson, A. P. Noble, E. Longaker. The tubes were as thick as the finger, they had thin walls, and were distended with blood. The ovaries were over size, and the right one was cystic. The ligature slipped from the uterine end of the left tube, and before it could be secured there was free hæmorrhage. The operation lasted forty minutes. Convalescence was retarded by abscess of one of the suture tracts. The patient made an excellent recovery. Present condition: Has lost no blood since the second day after the operation; appetite good, and is able to resume her occupation of seamstress; frequently walks two miles to her work; all pain has disappeared; has gained twenty-two pounds since the operation. December 20, 1886, the sound entered the uterus 3¼ inches; the tumor was greatly reduced in size.

Case 2. Hystero Epilepsy.—Mrs. C., æt. 30, primipara. Had always enjoyed good health until after the birth of her child six years ago. She had been delivered with forceps, and the cervix and perineum had been badly torn. She was in bed nine weeks after her confinement. No clear history of her puerperal trouble could be obtained. She has had profuse catamenial discharges since. About six months after the birth of her child she first commenced to have attacks of loss of consciousness followed by epileptiform seizures at her menstrual periods. These gradually became so severe as to place her life in seeming jeopardy during their occurrence, and left her utterly prostrated. She had been in bed about twenty days out of every month for four years. Her epileptic seizures occurred only at her monthly periods. Everything that her medical attendant could think of had been done for her, and her family were about to place her in an insane asylum. The ovaries and tubes were removed October 3, 1886. The operation was an easy and simple one. The patient made a speedy recovery without any untoward symptoms. *Present condition:* She is now able to earn her living as a yarn picker, working full time; has had no discharge of blood, little or no pain, *and not one seizure since the day of operation.*

Case 3. Tubercular Pyo-Salpinx.—Miss E. R., æt. 19, nullipara. This patient was also operated upon on October 3, 1886. Since menstruation began, at 15 years of age, she has had constant dull, aching pain, deep seated in the pelvis. At her menstrual epochs "her agony has been unbearable." Menses have always been slight in quantity and regular as to time. She presented a badly nourished appearance. Physical examination showed marked evidence of general tuberculosis. In spite of this fact, and in view of her intense menstrual pain, oöphorectomy was deemed justifiable and was accordingly done. Both the tubes were as large as bologna sausages, and both ovaries were cystic. Tubes and ovaries were matted in a mass of adhesions which rendered the operation very tedious, it lasting one hour and ten minutes. Microscopic examination of sections of the tubes showed colonies of the bacillus tuberculosis. Both tubes were filled with a greenish pus which was very offensive. The recovery was complicated by an arthritis, the symptoms of which were so obscure as to render it difficult to say whether it was septic, rheumatic or hysterical. She eventually made a good recovery. *Present condition:* Her physician, Dr. Walter E. Bibby, of Kensington, Phila., reports: "She is entirely free from pain, able to walk about, and to attend to light household duties. Under the use of cod-liver oil and malt and alcohol her tubercular trouble seems to be making little or no progress." As her peritoneum showed evidence of tuberculosis, as an experiment, bichloride solution, 1 to 8000, was used to wash out the abdominal cavity. Cases 2 and 3 were operated upon before Drs. A. W. Biddle, W. E. Bibby, W. C. Goodell, E. Wilson, Longaker, and C. P. Noble. All were done at the Philadelphia Lying in Hospital. In each case the abdominal cavity was thoroughly flooded with boiled water before it was closed. The drainage-tube was not used. The carbolized Chinese silk ligatures

and silkworm-gut sutures were used. No anodyne was given after the operation, and no food was given for thirty-six hours after operation.

DR. H. A. KELLY was particularly interested in the tuberculous tubes, and regretted that an examination of the uterine discharges had not been made, as it would almost certainly have established the diagnosis. As to the right to operate upon a patient having a cavity in the lung, no general rule can be laid down; every such case stands by itself, and much must be left to the judgment of the operator.

DR. BAER would hesitate for some time to operate in a case of general tuberculosis with a pulmonary cavity. He did not think tuberculosis could cause pyosalpingitis.

DR. KELLY remarked that at least two cases have been observed here and many more abroad, and it has been recently formulated by Prof. Hegar among the tubal diseases which may require operation.

DR. PARISH thinks the general condition of the patient outside of the pulmonary disease would decide the question. Severe pain should be relieved unless the patient had a very short time to live.

HYDROSALPINX.

DR. H. A. KELLY exhibited the tubes of a patient who had suffered from metrorrhagia over thirteen years. She had been in five large hospitals in Philadelphia without relief, and had faithfully tried every plan of treatment, systemic and per vaginam. The diagnosis of enlarged tubes was made before operation, and on removal with their respective ovaries, the tubes were found, one as large as a bologna sausage and the other a small sausage, with a limpid fluid. She has lost no blood since the metrostaxis following the operation about six weeks ago.

DR. KELLY also exhibited fresh, large cystic ovaries and tubes of a large fibro-cystic tumor upon which he had operated in the morning. The ovaries were sessile, surrounded by congeries of great dilated vessels. The operation was one of extreme difficulty. (*Note five days after operation: "The patient's condition is perfect."*)

The patient whose history was read at the preceding meeting, who had ovaries and tubes removed for chronic subinvolution and endometritis, was presented to the meeting. She has lost all pain and feels perfectly well for the first time in years. The uterus is normal.

DR. PARISH reported a *Porro-Müller Operation.*

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, December 17, 1886.

THE PRESIDENT, CHAS. WARRINGTON EARLE, M.D., IN THE CHAIR.

DR. HENRY T. BYFORD exhibited the following specimens:

PROLIFERATING OVARIAN CYSTOMA.

This specimen, removed three weeks ago by Dr. William H. Byford, at the Woman's Hospital, is interesting in being a large ovarian cystoma, composed of an immense number of small cysts. Extremely formidable in appearance—resembling a malignant growth—it has pursued an exceedingly benign course. Adhesions were few and easily severed. The subsequent recovery was typical, one dose of morphine constituting the entire medication.

PAROVARIAN CYST AND APPENDAGES, COMPLICATED BY A UTERINE FIBROID.

This cyst, which was about the size of the head of a child 2 years old, developed between the layers of the boad ligament in a direction away from the uterus, lifting up the Fallopian tube, ovary and infundibulo pelvic ligament. The tube is straightened and hypertrophied, admitting the finger for an inch into the fimbriated extremity, and the infundibulo-pelvic ligament is separated from its ordinary pelvic wall attachment by a larger portion of the tumor, over and under which the peritoneum passes to form, with the ovarian ligament and uterine end of the Fallopian tube, the pedicle. Had there been no pedicle, or had it been desirable to leave the ovaries, the inner coating of the cyst could have been taken out of the serous investment in about two minutes, without violence or hæmorrhage. They separate now almost as easily as if they were wet pieces of linen lying in apposition. The ovary is slightly hypertrophied. On account of the presence of a uterine fibroid tumor, the size of an orange, the other healthy ovary and tube were removed. Three transparent cysts, about the size of beans, and feeling as hard as bone or wood are, as you see, hanging by long pedicles from the meso-salpinx. The ovarian artery runs over the tumor and under the tube, is elongated and four or five times its normal thickness. Here is also the left tube. It is congested, but neither it nor the artery is appreciably enlarged. The ovary is large but not pathological.

OVARIAN CYST IN THE BROAD LIGAMENT CONTAINING THE DEGENERATED OVARY.

This tumor, which was removed by enucleation and which was the size of a pregnant uterus in the sixth month, is interesting by comparison with the other, and also as illustrating the dangers of tapping. It evidently developed from the surface of the ovary between the layers of the broad ligament towards the uterus. The remainder of the ovary has developed into a multilocular cystoma the size and shape of a large orange, and projects into the large cyst. The firmness of the adhesions of this inner coat of the tumor to its peritoneal covering, as compared with the smaller cyst just shown, suggests that small tumors are more easly enucleated than large ones, and constitutes an argument in favor of earlier operations. The horn of the uterus with the Fallopian tube was hypertrophied and drawn up over the anterior surface of the tumor, so that when exposed during the operation it looked like a pregnant uterus with a large vein running over it, diagonally across the incision. Had the tumor been tapped in the ordinary place, trouble must have resulted, and the operation which, after the stripping of this hyper

trophied and congested uterine tissue from the tumor, was easily and rapidly completed, would have been complicated. The uterus in a few weeks was apparently normal in size, position and mobility. It is interesting to note that the tumor was mistaken for advanced pregnancy, about a year ago, by one of our most prominent general practitioners.

SUPPURATING OVARIAN ADENOMA, WITH UTERUS.—AUTOPSY.

This tumor, which was examined by Dr. F. S. Johnson, is an ovarian adenoma of the same histological nature as the first specimen shown, but presents a striking contrast by malignant course and small size, as the whole was scarcely larger than a child's head. An ovarian tumor was removed from the opposite side by Dr. William H. Byford several years ago. As this was not a malignant growth, although practically pursuing the course of one, an attempt was also made by him to remove this, or at least cure the discharging abscess that surrounded it, about five months before the patient's death, but it was, from the nature of the case, only partially successful. In attempting its removal after death, the exhibitor was almost equally unsuccessful, for it was surrounded and intermingled with pus cavities and intestinal loops, and had destroyed and occupied the place of all the pelvic tissues except the rectum, bladder and uterus with the right round ligament which you see hanging to it. The cul-de-sac was full of it, the posterior uterine surface inseparable from it, the right broad ligament supplanted by it, and the contents of the left broad ligament an agglomerated mass of inflammatory tissue. A blue walled abscess about the size of, and extending along the course of, the ascending colon, and secured an outlet just below the border of the ribs. Another abscess opening just below and to the right of the umbilicus gave exit to pus, fæces and semi-transparent, jelly-like ovarian fluid. The right ureter was dilated and hypertrophied. The pelvis of the kidney must also have been dilated, although that being left to be examined last,[1] was finally forgotten. The lower three feet of the ileum were compressed and atrophied to the size of a small lead pencil. Just above it ran a fibrous tube of the usual size of the ileum, straight from the cæcum to the lower opening in the skin. The uterus, which previous to the removal of the first tumor, had developed two healthy children, was of rather small size, in a normal position and healthy, excepting a moderate laceration of the cervix and a slight degree of injection of the mucous membrane about the os.

FIBRO-SARCOMA OF THE LEFT HORN OF THE UTERUS, LUNGS, PLEURA, PERICARDIUM, RECTUM, TRANSVERSE AND DESCENDING COLON AND ABDOMINAL PARIETES.

About a quart of serum was found in the right pleural cavity. Several round, fibro sarcomatous tumors, the size of nuts, and several indefinite spots of contracted fibrous tissue, were found in the lungs, suspending their expansibility except over small areas. The two exhibited were torn from the lungs; one from the center of the apex and the other from the pleura at the base. A fibro-sarcoma the size of a goose's egg, which is still attached to the left pleura, was also attached to the pericardium. The heart weighed 8¾ ounces, was drawn to the left by the contracted lung (which had but little fluid about it) and contained an ante-mortem clot. The liver was enlarged and mottled. The stomach lay entirely to the left side, in front of the compressing and atrophied spleen, with the pyloric orifice suspended vertically under the cardiac orifice, and not reaching as far to the right as to the median line. The transverse and descending meso-colon was stung with these fibro-sarcomatous masses, the size of hazel nuts, and the rectum covered with the same of a little larger size. A few were also found on the peritoneal surface of the abdominal parietes. The uterine tumor weighed twenty ounces, and, like all of the specimens, cannot be distinguished from fibroid or fibrous tumors by the eye, except over a limited area upon the anterior surface, where it has softened and degenerated into the round celled variety. The fact that the patient was twice tapped by physicians for ovarian cystoma makes it seem probable to me that this change has been produced by the introduction of the trocar, and that the little tumors on the abdominal parietes were due to the adhesions forming afterwards. The fluid obtained then was probably peritoneal which, to the amount of about eight pints, had again accumulated. It was dark-green in color. Abdominal enlargement was noticed several years ago. An operation had been advised two years ago. Dr. F. S. Johnson examined the specimens, with the result mentioned, and but for an attack of sickness would have reported upon them in person.

Dr. W. W. Jaggard exhibited the following specimens:

UNILOCULAR CYST OF RIGHT OVARY, THE REMAINING OVARIAN TISSUE SHOWING CORPUS LUTEUM OF MENSTRUATION.

He had recently removed the tumor, and the patient had made an excellent recovery. Menstruation ceased three days before the operation. The specimen was interesting, though not exceptional, in showing the persistence of functional activity in such an extensively diseased organ. The left ovary was normal, and was not removed.

A PLACENTA, SHOWING VELAMENTOUS INSERTION OF THE UMBILICAL CORD, AND REMAINS OF AN EXTENSIVE HÆMORRHAGE INTO THE PARENCHYMA OF THE ORGAN.

The term *insertio velamentosa* means a separation of the three vessels of the cord before they reach the placenta. The vessels pursue a straggling course between chorion and amnion, for a variable distance, and each one reaches the placental margin by itself.

According to B. Schultze (*Jenaische Z. f. med. u. Naturw.*, 1867, Heft. 2 and 3), the origin of velamentous insertion of the umbilical cord is as follows:

[1] The autopsy was performed in the midnight before the burial, and in a small town, in a cold room and without conveniences.

The allantois carries the fœtal vessels to the periphery of the egg, entirely irrespective of the future placental site. Indeed, it is comparatively seldom that the future placental site is immediately reached. The vessels penetrate all the chorionic villi indiscriminately. These vessels are subsequently obliterated in the chorionic villi not destined to form the placenta, and vascular connection only remains with that portion of the chorionic villi corresponding to the *decidua serotina*. With the further growth of the egg, under normal conditions—it makes no difference what point in the egg periphery the allantois originally touched—as the amniotic sheath forms around the rudimentary cord, the fœtus performs a movement of rotation, so that the vessels pursue a straight course to the placenta. Now this movement of rotation may be hindered, and the formation of a complete sheath prevented by anomalous adhesions. The hindrance is adhesions of the umbilical vesicle, the ductus, or the vessels to the amnion or chorion. In such cases, if the growth of the ductus does not keep equal pace with that of the amnion, a complete sheath cannot be formed, and the amnions forsake the vessels before they reach the placental edge. Velamentous insertion of the cord can occur at the pole of the egg opposite to the placenta, or at any intermediate point. The anomaly is observed most frequently in cases of multiple pregnancy.

Velamentous insertion of the umbilical cord seldom leads directly to interference with the development of the fœtus. In labor, however, the vessels may be compressed between the presenting part and the parturient passage, and the child may be asphyxiated, or, with the rupture of the bag of waters, a vessel may be torn and the child's life endangered by loss of blood. In general terms, the clinical picture bears a great resemblance to *placenta prævia*.

In the specimen presented, the cord is inserted into the chorion about 5 centimetres from the placental edge. The anomaly was not recognized until near the conclusion of the first stage of labor. A large vessel was torn at the same time with the spontaneous rupture of the bag of waters, and the life of the child was seriously jeopardized by the loss of blood.

The child, though probably mature in point of age, was small and feeble; weight 2,700 grams, length 47 centimetres. The failure in development could be ascribed to the large hæmatoma and numerous hæmorrhagic infarctions in the *placenta fœtalis*. The mother of the child was threatened with abortion, and suffered from uterine hæmorrhage when she was in the sixth month of pregnancy. The child, at the time of presentation of specimen, was living.

THE PRESIDENT exhibited the ileum removed from a child 22 months old, who died of typhoid fever, in which the characteristic lesions of the disease could be seen.

The child had continued fever for five weeks, the temperature reaching 105° F. part of the time, rose-colored spots in the third week, intestinal hæmorrhage, tympanites, and delirium.

The case is remarkable on account of the age of the patient, as many authorities deny the existence of genuine typhoid in children.

Stewart (1841) describes infantile remittent fever in which the bowels are sometimes relaxed, occasional delirium, followed by a low, quiet state. Evidently he did not recognize typhoid as occurring in children.

Condie (1853) says: "It is much more than probable that typhoid will be found to be a much more frequent disease among children than has heretofore been supposed."

Bedford (1856) does not speak of typhoid.

Hillier (1868) says: "Typhoid is not infrequent in children, Many cases of infantile and gastric fever belong to this class."

Meigs and Pepper (1870) say: "Typhoid fever has been observed during the first year of life, but is rare under the age of 2 years. It is comparatively infrequent between the ages of 3 and 8 years, and attains its maximum of frequency in childhood between the ages of 8 and 11 years."

Tanner (1871) believes that all those varieties of typhoid which have hitherto been described under the names of simple, continued and remittent fever, are but different degrees of one and the same disease, typhoid.

Eustace Smith (1884) says: "Enteric fever is common in children."

Steiner (1871) says of typhoid: "This is common among children. In the Prague Hospital, out of 80,245 patients, 1,180 had typhoid."

Vogel (1870) says: "Abdominal typhus is much more frequent than is commonly supposed."

He thought Lewis Smith did not mention typhoid in his first edition, but in his sixth (1886) he describes it fully, believing that it is not infrequent in children, and presents peculiarities not found in adults, hence his chapter of eleven pages.

From the above quotations it seems that foreign authors recognize it as moderately frequent, and writers in this country who, a quarter of a century ago, either did not speak of the disease as occurring among children or gave the subject very slight mention, are now describing it as more common, even among quite young children.

In all probability, as our malarial diseases become rare, typhoid fever increases in frequency.

DR. J. H. ETHERIDGE made the following remarks upon

A CASE OF ANTERIOR VAGINAL ENTEROCELE

with exhibition of patient.

I have a rare case that I would like to exhibit to the Society, one of anterior vaginal enterocele. I have had a few of my medical friends examine it, and they all concur in saying that they have never seen a case like it. The patient is 19 or 20 years of age and has one child, 11 months old. When she was about six months gone in pregnancy, she "jumped the rope" one day, and after that she felt something come down through the vagina. She went to full term and had a normal labor. Whenever she strains or lifts, the enterocele comes down, presses the vulva apart and comes out between the thighs. On examination I find quite a large opening in the roof of the vagina. The edges of the ring can be very easily outlined with the finger, and when the hernia is down the finger in the vagina is at once attracted

by a pendant mass, and by pressing it a little one can determine that it is filled with gas. The opening comes down to the left of the uterus, anterior to the broad ligament and posterior to the left of the bladder.

A Fowler pessary has been fitted which seems to answer the purpose of complete retention, and as long as the patient can avoid an operation my advice is not to have one. The uterus is in good position. She made a good recovery from her confinement and is nursing her child, and seems to be in a perfectly physiological condition. The question of operative procedure for a radical cure is a very serious one for this patient. Laparotomy is full of difficulty in attempting to close the hernial opening from within, is of a most unsatisfactory possibility in its outcome, and is followed by the very great risk to life which attends all laparotomies. Any operation through the vaginal tract will be attended by such a lack of certainty in results as to cause me to hesitate in essaying it. Until it is found impossible to retain the intestine in its proper place with a pessary, I have advised the patient to avoid submitting to any surgical procedure. The patient is present, and each gentleman desiring to do so can make the examination and verify what I have said.

Dr. Philip Adolphus: The case just presented for examination by Dr. Etheridge is a typical case of vaginal hernia, the intestine passing between the loosely attached connective tissue which unites the bladder and the anterior wall of the vagina, in its upper half. This mode of descent is much more infrequent than a hernia into the *cul-de-sac* of Douglas. In the case here presented the hernia is reducible in the upright position, contains intestine only, and has for its covering the peritoneum and vaginal wall. What can be done for the patient's relief? These hernia seldom becomes strangulated. During labor, however, besides being an obstacle to prompt delivery, they are liable to contusion and strangulation. No retentive apparatus is worthy of trial, for all distend the vagina and ultimately increase the evil. What surgical procedure should be attempted? The text-books to which I have access do not suggest anything. Is the hernia to be closed by way of abdominal section or *per vaginum*? I think the closure *per vaginum* is preferable, and I suggest the following procedure adapted from Stoltz's operation for cystocele: "The patient being placed in Simon's position with the perineum retracted, the hernia is to be reduced and kept in place by means of armed probangs. An incision to be made over the tumor, the tissues divided until the ring of the hernia is exposed. This ring is to be surrounded by a running ligature of very heavy catgut, and then closely approximated, tied, and the ends cut off short, or if thought preferable, interrupted catgut sutures may be introduced to effect the same purpose. This completes the first step of the operation. Then remove a piece of the vagina larger than the protruded tumor, over the region of the hernia. The wound may be closed by running a circular single ligature of carbolized silk in and out, about an eighth of an inch from the margin of the wound, all around it, the end of the ligature being brought out close to the place where it was first inserted. The two ends are then drawn tight and tied, leaving a puckered opening into which a little drainage tube may be inserted. During the introduction and the tightening of the ligature the intestine may be held back by armed probangs. It is easier to work in this region with the scissors than the knife. Great care should be practiced in operating in this neighborhood not to wound the uterus and the peritoneum, which can be avoided by elevating the mucous membrane as it is removed. Now a few words in regard to the abdominal section for reducible vaginal enterocele. After having opened the abdominal cavity and withdrawn the prolapsed portion of the intestine, will it be easier to close the hernial aperture than *per vaginum*? I think not. The peritoneum and cellular tissue beneath it (abundantly supplied with lymphatics and blood-vessels, the parametric tissue of Virchow and Spiegelberg) will have to be incised, the bladder and upper portion of the vagina separated, the redundant tissue of the anterior wall of the vagina drawn up and excised, then stitched and replaced; the peritoneum also closed below as well as externally in the abdominal parietes. Will this render the site of the hernial protrusion stronger? Will it be a safer and more efficient operation than the first? I think not.

Dr. H. T. Byford: Dr. Etheridge has shown us one of those rare and interesting cases of anterior vaginal enterocele. The protrusion is through the parametrium in front and to the right of the cervix, the entire uterus being pushed backward, and the bladder forward. The left ureter can be felt passing from the trigone in front of the tumor downward and to the left of it. The broad ligament is pushed backward, and the round ligament outward toward her left side. The parts to the left of the median line seem only slightly to participate in the general displacement. The remedy for this condition, of course, must be to get the displaced organs and tissues back into the place now occupied by the intestine. I think Dr. Etheridge was wise in rejecting abdominal section as a remedy, for no advantage could be derived from it that would compensate for the risk involved. An operation from the vagina that would be justifiably performed upon a girl of her age could not be expected to be permanently successful, as the parts could not be properly replaced, and vaginal support could only be given. The treatment by pessary, already adopted in this case, is better than either of these procedures, because it acts partly by replacing the organs, especially the uterus, and partly by providing a barrier to the descent of the enterocele. Its weakness is that it does not tend to strengthen the parts upon it, and that it weakens those under it. The most efficient and rational method of permanently replacing the parts, and thus curing the enterocele would be to perform Alexander's operation of shortening the round ligaments. This would draw the fundus forward over the bladder and thus replace the normal central barrier to the descent of the intestines. It would also draw the round ligament and upper portion of the broad ligament forward to form a lateral support

to them. By turning back the base of the broad ligament it would tend to draw back into position the ureter (which is in close relation with its posterior edge), and at the same time the connective tissue through which the ureter runs and which is displaced forward with it. I know of no other method in which the parts could be brought back so nearly to their former relations. A pessary could now be worn until the parts had contracted and regained tonicity. If then the anterior vaginal wall remained redundant a circular piece should be excised in front of the cervix and by a stitch passed around it drawn together, along with the parametric tissue immediately above it.

DR. ETHERIDGE: If Alexander's operation was satisfactorily performed, what would be the effect upon the bladder and upon subsequent pregnancy?

DR. BYFORD: After the operation the fundus is not, or should not be, held down upon the bladder as firmly as in some cases of anteflexion in which there are no bladder symptoms of any account. I have performed three operations. In one case the bladder symptoms were benefited, in the others there were none complained of, either before or afterward. As to pregnancy, already there is some experience to show that it does not interfere. The round ligaments are not elongated in pregnancy as much as would be supposed, since the uterus grows to a certain extent away from them. In many cases of anteflexion or anteversion the ligaments are shorter than after an Alexander operation, yet give rise to no serious trouble in pregnancy.

DR. ADOLPHUS: How could Alexander's operation be of benefit if it draws the fundus down and the cervix up, since the enterocele is between the bladder and the cervix?

DR. BYFORD: It draws the body of the uterus down under the intestines, displacing them upward. The cervix needs to be held upward and backward in order to secure a proper relation of parts.

(*To be concluded.*)

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

New York County Medical Association—Election of Officers—Dysentery at the Almshouse, Blackwell's Island—Indiscriminate Porotomy—Quinine as an Antipyretic in Pneumonia—Small-Pox—Proposed Reorganization of the Health Department—Deaths from Water Fuel Gas.

At the January meeting of the New York County Medical Association, the following officers were elected for the ensuing year: President, Dr. John Shrady; Vice-President, Dr. J. R. MacGregor; Recording Secretary, Dr. P. Brynberg Porter; Corresponding and Statistical Secretary, Dr. Glover C. Arnold; Treasurer, Dr. Charles Ellery Denison; Member of the Executive Committee, Dr. Edwin Sanders.

The report of the retiring Treasurer, Dr. E. S. F. Arnold, showed that seventy-eight new members had been added during the year. The introduction of moderate monthly entertainments after the scientific work of the evening he thought had been of material advantage, especially in promoting harmony and goodfellowship, and in making the members better acquainted with each other; and he expressed the opinion that, should these gatherings be a means of bringing the younger and older men into more friendly and intimate contact, and induce the latter, as occasion offered, to extend a helping hand to such of the former as might be benefited by it, the results of this fraternization would be all that could be desired.

Dr. H. M. Briggs read the history of an epidemic of dysentery at the Almshouse on Blackwell's Island, in which he stated that in the years 1884–5 there was some dysentery in this institution, though not of an epidemic character; but an examination made by an inspector of the Health Department showed the sanitary condition of the buildings to be good. Some closets which were undoubtedly the cause of the trouble were not, however, inspected, as they were separated from the main buildings and did not attract attention. The epidemic in question commenced early in June, 1886, and the cases increased in number and severity until the 15th of July, when Dr. Briggs came on duty. At this time from twelve to fifteen new cases of severe dysentery appeared each week in the female almshouse, and the weekly number of deaths from the disease amounted to five or six.

Believing, as he does, that dysentery, in the vast majority of cases, is an infectious disease, due to some definite, determinable cause, he immediately made a careful inspection of all the buildings in the institution, as well as of the food and water supplied to the inmates; examining closely into all the conditions which might possibly bear upon the development of the disease. Aside from the element of overcrowding, nothing could be found to which importance could be attached, as regards the causation of the epidemic, except the state of the water-closet above referred to, which was in general use by the inmates. This was separated from the main building by a roadway, and had a large cemented brick vault, with a sewer about one foot in diameter leading from it to the river below, which was found to be in an exceedingly bad condition. The vault was flushed by the water from the bath-house, which was in the same enclosure, and by the rain-water from the roof of the main building. At the time of the examination the vault contained two or three feet of semi-solid fæcal matter. During the early part of the summer the weather had been very dry; so that the supply of water from either source was very small. As far as could be learned, the closet had not been cleaned since the autumn of the preceding year, and it was ascertained that the outlet into the sewer mentioned was eighteen inches above the lowest portion of the bottom of the vault, which was round. Moreover, the sewer was found to be partly stopped up; and when it was remembered, said Dr. Briggs, that the closet was in constant use by nearly 800 persons, some idea might be formed of the conditions prevailing at the time.

At his request, the closet was immediately washed out and disinfected. At the same time orders were given for the careful disinfection of all beds used by patients who had suffered from dysentery, and who had been removed to the hospital, and a solution of bichloride of mercury was ordered to be placed in the vessels of all who were affected with diarrhœa in any form. The good effect of these measures was immediately apparent, for while there were thirteen deaths from dysentery in June, and seventeen in July, there were only four in August, and none at all in September until the 25th of the month. In fact, only one death occurred among those who were attacked with dysentery after the closet was cleaned, and in this case the immediate cause of death was cerebral hæmorrhage. From August 10 to September 25 no new cases appeared. During the interval between July 18 and September 25, the closet was cleaned a number of times. For about ten days preceding September 25, however, the closet was not cleaned, and at this time a number of new cases and several deaths occurred. Certainly, Dr. Briggs thought, more conclusive proof could scarcely be desired of the causative relation existing between the condition of the closet and the appearance of the disease.

But there were still other facts that pointed strongly in this direction. Among the inmates of certain wards who made use of a closet in the main building, which was provided with school-sinks and was in excellent condition, very few cases of dysentery occurred at any time, and it was ascertained that among this few, in every instance those affected had used the general closet referred to, at least at times; while not a single case appeared among those who used exclusively the closet in the main building. Again, no cases of dysentery occurred during a period of nearly seven weeks, from August 10 to September 25 (when the closet was kept clean), at a time when a larger number of cases would naturally be expected than in June or July. Thus, in September, 1884, more cases occurred than in any one of the summer months.

This epidemic of dysentery Dr. Briggs thought interesting from the almost conclusive evidence presented of the causal relation existing between the exposure to the emanations of decomposing human excreta and the appearance of the epidemic. There could be no doubt, in his mind, that epidemic dysentery was an infectious disease due to the action of some definite micro-organism. There was much evidence, he said, to show that dysentery, under certain conditions, is contagious; but, apparently, like typhoid fever, it was generally a miasmatic contagious disease propagated by the stools of dysenteric patients. The difficulty of isolating from the stools the specific micro-organism which causes any disease of the alimentary canal was very great, and in conclusion he expressed his regret that he was not able to make any satisfactory investigations on this point.

The President, Dr. Leach, said that he had often met with obstinate cases of follicular enteritis and dysentery in some of the most expensive houses in New York, and that in most instances it was ascertained that the cause of the trouble lay in some defect in the drainage. He had known of a number of dwellings about which there had seemed to be a fatality, since several persons who had previously been in good health successively died of this kind of disease after having become residents of them.

The Secretary, Dr. Porter, said that a few years since he had occasion, in connection with the State Board of Health, to investigate an epidemic of dysentery occurring in a village on Long Island, in which it was found, by expert analysis, that in every instance the well-water of the premises where the case occurred was contaminated; and it was ascertained, furthermore, that the position of the privy in reference to the well was such that defilement of the water by human excreta was possible. His report of the outbreak was published in the second annual report of the New York State Board of Health (1882).

The next order of business was a paper by Dr. Gouley, in which he made a vigorous protest against indiscriminate cutting of the meatus urinarius. Of late years, he thought, the import of such consequences of urethral stricture of the balanic region, such as dysuria, vesical irritation, and "reflex neuroses," had been greatly over-estimated; this had often led to very rash and unwarranted surgical interference. Meatus cutting, or, to give it a proper technical name, porotomy, had, he said, become the fashion, and every adult and adolescent who is not afflicted with congenital hypospadias must have his meatus cut; for he is told that the nozzle of his urine-hose must be of greater calibre than the hose itself. The doctrine that the meatus should be the largest part of the urethra, Dr. Gouley continued, was not only unsound, but most dangerous, and was leading to much evil. It was, therefore, high time to protest against the indiscriminate performance, and particularly against those incisions which resulted in deformity of the urethra.

The congenitally narrow meatus was very often met with, and yet comparatively few patients were ever inconvenienced by this defect. In many cases the meatus barely admitted a catheter of the diameter of 3 or 4 millimetres, and in this condition it was, of course, necessary to enlarge it to a moderate degree by incision when the passage of a catheter or a lithotrite was required. But to incise the whole balanic portion of the urethra, through and through, was, he thought, as unwarranted as it was unsurgical.

Strictures of the balanic region were not ordinarily amenable to treatment by dilatation, but required incision, which was the most prompt and efficient method which could be employed for their eradication. The incision, however, should be directed and proportioned in accordance with the size of the glans and the condition of the extremity of the urethra. When, for instance, the meatus was normally situated, a sufficiently free central cut along the floor of the urethra answered the purpose of simply enlarging the contracted urethral extremity within proper limits; but when there happened to be a slight balanic congenital hypospadias, this kind of incision only increased the deformity, and failed to relieve the stricture; which could be successfully treated only

by bilateral porotomy, performed in such a way as not to increase the hypospadias.

The probable object of these extremely free incisions of the urinary meatus was that instruments of extremely large calibre might be introduced through strictures of the deeper parts of the urethra. This, Dr. Gouley went on to say, was another of the many surgical heresies now prevalent. The ostensible reason for this over-stretching of the urethra was that the stricture or strictures might not recur; but the careful observation of many cases treated by the introduction of sounds of the diameter of 11, 12, and 13 millimetres into the average human urethra showed that, while the stricture in some instances did not recur, the urethra, as an organic channel, was entirely spoiled. It became, as compared with a normal urethra, what an old, worn-out, hardened rubber tube was to one which had just come out of the maker's hands. The urethra, when constantly distended, soon lost a very considerable number of its mucous follicles, and became dry, leathery, inelastic, patulous, and no longer capable of successfully propelling the urine, which slobbered out of a wide mouth instead of being forced in a well-formed stream through a narrow outlet. The genital functions were also said to be impaired by this over-distension of the urethral canal.

Dr. Gouley expressed the opinion that it is never justifiable to over-distend the whole urethra. Useful instruments, he said, had been devised to obviate this evil, which were so constructed as to over-distend the strictured part of the urethra only, and save injury to the normal part of the canal, but they were but little used. Dilating instruments of this kind, he thought, should be occasionally employed during the treatment of strictures in the deep urethra; but the main object of moderate dilating catheterism was to restore the urethra as nearly as possible to its normal suppleness.

Dr. Frank Graner presented a specimen of extra-uterine pregnancy, in which the seat of the development of the ovum was in the Fallopian tube, close to the uterine orifice. At the autopsy the fœtus, which was apparently of the age of seven or eight weeks, was found among some clots in the abdominal cavity. There are three points of special interest about the specimen, viz: the presence of a decidua vera in the uterus, the sympathetic enlargement of the walls of the uterus, and the thickening of the posterior part of the Fallopian tube at the point of rupture.

Dr. Briggs presented, for Prof. Janeway, a specimen of primary carcinoma of the cystic duct, with abundant carcinomatous deposits in the liver and in the stomach. Its special points of interest were, the primary growth in the cystic duct, which is a very rare location for such trouble, and the marked difference between the primary and the secondary growths; the former being so insignificant as almost to escape notice, while the latter was of the most extensive character.

At the last meeting of the Academy of Medicine the subject of discussion was the value of quinine as an antipyretic in pneumonia. The opening paper was by Dr. J. H. Ripley, who based his opinions upon a series of carefully recorded experiments made during several years at St. Francis' Hospital in this city. The conclusion at which he arrived was, that quinine is a feeble and uncertain antipyretic in pneumonia. Nor was this all. It had a bad effect on the appetite and digestion, and not infrequently excited nausea and vomiting. In addition, it was liable to produce marked cardiac weakness, profuse cold perspiration and profound nervous depression. Opisthotonis was observed in one instance, and in a number of cases it caused epistaxis. In these cases the urine was examined before and after the ingestion of large doses of quinine, and in one the urine, previously normal, was found to contain albumen, hyaline casts, and renal mucus, after the use of the drug. These bad effects, he thought, more than counterbalanced any good results that could be attributed. He had not seen in any instance that it shortened the natural course of the disease, and he expressed himself as skeptical in regard to the alleged action of the drug in promoting cell migration. In some cases the pneumonic consolidation had extended under its use. Finally, he said that if an antipyretic effect were desired, it could be secured much more efficiently by such agents as antipyrin and salicylate of sodium.

The various speakers who took part in the discussion agreed in the main with Dr. Ripley, with the exception of the President, Dr. Jacobi, who said that he thought that the inefficiency of quinine referred to was due in a great many instances to the condition of the stomach incident to the febrile state of the system, which prevented it from absorbing the drug; and that the same was true of the rectum. In order to secure the full effect of the remedy, therefore, it was necessary to administer it hypodermically. He had been very successful with this method, and the preparation which he was now in the habit of using, on account of its great solubility, was the carbamide.

More cases of small-pox were reported during the month of January 1887, than in the whole of the two years 1883 and 1884; but this does not indicate a very alarming state of affairs, as there were only twenty-six cases reported in the first of these years, and five in the second. In 1885 there were 105 cases, and in 1885, 109. The disease appears, however, to be on the increase, and in order to prevent its further spread as far as possible, six extra sanitary inspectors have been appointed.

There has been introduced into the Legislature a bill doing away with the present Board of Health, and providing for a reorganization of the department with a High Commissioner of Health, to be appointed and subject to removal by the Mayor. The bill has been very carefully drawn, and it is to be hoped that it will be carried through for one reason, if for no others, viz.: that it will dispose of the present head of the department, General Shaler, against whom the Mayor long since preferred charges, but whom the Governor has thus far refused to remove.

Considerable excitement has been occasioned in Troy by the death of a number of individuals from water fuel-gas, by the escape of the gas from leaking

pipes into cellars, and thus up through the house, on premises where it was not used at all. It is a perfectly inodorous gas, composed largely of the deadly carbonic oxide, and it is likely that its manufacture and sale will be prohibited by law until this can be conducted in an unobjectionable manner. Certainly the experience of Troy proves that it cannot be introduced in a city with safety even for those who do not use it. P. B. P.

ELECTROLYSIS IN UTERINE FIBROIDS.

Dear Sir:—I note on page 79, of THE JOURNAL of January 15, 1887, 2d column, lines 56–64, the following: "Dr. William T. Belfield said: Dr. Martin has conferred a favor upon us in bringing Apostoli's method before us. During the last twenty-five years various attempts have been made to reduce fibroids of the uterus by the galvanic current; yet none of them have been recognized as successful, because, doubtless, as Dr. Martin very properly says, the current has been used in an ignorant, inaccurate and bungling way."

I remark as follows: "During the last twenty-five years" I performed the first operation on Mrs. Robert Pierce, of Melrose, Mass., August 21, 1871, so it is about sixteen years since electrolysis of uterine fibroids has been performed.

"The current has been used in an ignorant, inaccurate and bungling way." In the February and succeeding numbers, 1887, of the *American Journal of Obstetrics*, will appear the full account of the first fifty cases of electrolysis for uterine fibroids, to which the gentlemen named are respectfully referred. These cases are brought up to date as far as possible. The following points are of interest: Apostoli used currents of 1-25 to 1-5 ampère, with up to 200 applications in his cases, and reports no absolute cures. The report about to be printed shows a current larger than Apostoli's, the battery measuring 27 to 30 ampères, and from one to nineteen operations. The general résumé is, seven non-arrests, four deaths, twenty-five arrests, three relieved, and *eleven cured*. Since these first fifty cases there have been quite a number of cures. Respectfully yours,

EPHRAIM CUTTER, M.D.

1730 Broadway, New York, January 18, 1887.

AN INCORRECT WOOD CUT IN GRAY'S ANATOMY.

Dear Sir:—I have before me the tenth edition of Gray's Anatomy opened at page 925, on which page is a plate representing a view from within the pelvis. This cut is given to illustrate the anatomy of hernia, and especially the relation of certain blood-vessels to the hernial openings. Let the reader now turn to this cut in his Gray, *no matter what edition*, although the page may not be the same as the one given. In looking at the cut it will be observed that the large artery and vein are designated: "Femoral Artery," "Femoral Vein." These names are printed on the vessels. The names are incorrect at this point on these vessels. The artery is the *external iliac*, the vein the *external iliac vein*. The names femoral artery and femoral vein are not given to these vessels until they pass beneath Poupart's ligament. This plate serves to confuse the student in his studies of hernia.

It will be noticed that the deep epigastric artery is represented as originating from the femoral, so-called, just above Poupart's ligament. The point of origin of said artery is correctly given, but it is from the external iliac and not the femoral. Correct the names of the large blood vessels mentioned and confusion will disappear. I am surprised to find this same wood cut reproduced in Stimson's Operative Surgery.

It would be well for the editors and publishers of Gray's Anatomy to have this plate corrected in their next edition. A. C. SIMONTON, M.D.

Des Moines, Ia.

AMERICAN MEDICAL ASSOCIATION.

Dear Sir:—Lately in THE JOURNAL you made an appeal for papers to be prepared for the next meeting of the Association in Chicago, June next. In local societies the great difficulty lies in the selection of a subject. So often have papers been prepared based upon a single case that they have come to be looked upon as an advertisement of the writer. Would it not be well for the chairmen of Sections to select subjects in their various departments, and by correspondence learn who will write upon them? or publish a list of subjects in THE JOURNAL, with a request that those who would write upon them should inform the chairman, either personally or through THE JOURNAL. The members of the Association would, by this means, know what papers they could expect, and prepare themselves beforehand for their discussion. It seems to me in this way an interest would be excited that would attract attention, and both authors and disputants be benefited. It is very difficult, on the spur of the moment, to discuss any subject meritoriously and satisfactorily to either party. All special papers should be announced through THE JOURNAL at least one month in advance of the annual meeting, giving title, etc., with a brief intimation of what the writers propose to set forth in their papers. Yours truly,

WILLIAM BRODIE, M.D.

Detroit, Mich., January 27, 1887.

PSEUDO-MEMBRANOUS BRONCHITIS.

Dear Sir:—While reading, in THE JOURNAL, the report of a case of pseudo membranous bronchitis, by Dr. H. A. Johnson, and the discussion of the same, I called to mind a case in the Boston City Hospital. The case was acute and diagnosis not perfectly clear, but the autopsy showed a fibrinous false membrane lining the bronchi. I remember seeing perfect casts of the bronchi that he expectorated. If diphtheria could be excluded, it would leave acute pseudo membranous or fibrinous bronchitis as the diagnosis. Thinking the report of the case might prove of interest to one in writing upon the subject,

I would refer to the account of the case as published in the *Boston Medical and Surgical Journal*, of March 1, 1883. Yours respectfully,

HERBERT S. JOHNSON, M.D.

16 John St., Lowell, Mass., Jan'y 21, 1887.

INTERNATIONAL CONGRESS.

TRANS-ATLANTIC RATES.

For the information of our foreign brothers who propose to attend the meeting of the International Medical Congress, which takes place in Washington, D. C., on the 5th of September next, the following rates of travel across the Atlantic ocean have been submitted and recommended for their acceptance:

Red Star Line—$100, Antwerp–New York and return.

Inman Line—$100, Liverpool–New York and return.

Hamburg Line—$90, Hamburg–New York and return.

Royal Netherland—$80, Antwerp–New York and return.

The committee have proposed that each delegate shall have the privilege of bringing with him, at the same rate of expense, two lady members of his family, and believe that proposition will be accepted by those lines selected. Steps have also been taken to ascertain, at each of the four ports, Havre, Liverpool, Antwerp and Hamburg, the exact number of persons who will embark at these ports entitled to this reduction of rates. All further information on this subject will be promptly published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

A. Y. P. GARNETT, M.D.,
Chairman of Committee of Arrangements.

MISCELLANEOUS.

WOMEN DOCTORS FOR INDIA.—The London *Graphic* says: Lady Dufferin appeals to the women of England to subscribe what they can to the funds of the National Association for supplying female medical aid to their dusky sisters in the East. It is a most laudable undertaking, very large numbers of women in India being without medical attendance during sickness. They would sooner die than allow a man to see them, and they have, therefore, to trust for their recovery to the old wives' remedies which are among the traditions of zenana life. Now, however, that education is beginning to invade the sacred precincts of the *purdah*, the inmates are no longer content to trust their lives to ignorant crones, who are more skilled in distilling poisons and witchcraft than in useful medical lore. The demand, therefore, for women doctors from England is a genuine one, and not one of those philanthropic "fads" which are too often palmed off on the British public. There is another feature, moreover, which should commend the appeal even more to our favor. Rumor says that the number of lady doctors in England is multiplying far more rapidly than are openings for practice. But in the East they have a splendid opportunity before them, in the multitudes of native ladies whose husbands can afford to pay substantial fees. They would be safe, too, from masculine competition, nor would they feel that they were intruding upon a province not belonging to them by right. Indeed, so promising is the enterprise that one can only wonder an exodus of lady doctors bound for the East did not take place long ago. There is one matter, however, in which they must be very careful, to respect native prejudices. It is said that some of them sedulously cultivate masculine manners and appearance, in order to gain the confidence of their patients. This will not do in India; the Asiatic husband is very suspicious, and would probably detect in the supposed female Hakim an enterprising Feringhee bent on making surreptitious love to his many wives behind the *purdah*.

A GOOD RESOLUTION.—At the recent annual meeting of the Ohio State Board of Health, Dr. Jones introduced a resolution requiring that every railroad company doing business in Ohio shall carry on its trains an emergency case, which shall contain bandages, cotton, and other things desirable in accidents, and that employes shall be instructed in their use by the surgeon of the road.

HYPNOTISM AND POLITICS.—While Charcot is electrifying Paris with the results of his hypnotic experiments at the Salpetrière Hospital, Virchow, in Berlin, for the nonce has withdrawn from "The Battle of Cells and Bacteria" and is fighting the battles of his party against the redoubtable Von Moltke.

DR. JOSEPH TABER JOHNSON was elected President of the Medical Society of the District of Columbia at its last annual meeting.

THE CODE.—The cheap reprint edition of the Code of Ethics of the American Medical Association is now ready. Physicians, or others, wanting single copies should send to the Editor of THE JOURNAL three cents in stamps. One hundred copies, $2.00

ST. LOUIS MEDICAL SOCIETY.—*The Weekly Medical Review* says: In the fifty years' history of this Society no administration was more successful than that of the president, Dr. E. H. Gregory. It also pays a high compliment to his successor for 1887, Dr. S. Pollak.

THE CHICAGO HOSPITAL FOR WOMEN AND CHILDREN.—Mrs. George M. Pullman gave an amateur theatrical entertainment at the Pullman residence on Tuesday evening, which netted $1000 for the hospital.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 22, 1887, TO JANUARY 28, 1887

Lieut. Edward R. Morris, Asst. Surgeon, granted leave of absence for one month, to take effect about March 10, 1887, with permission to apply for an extension of twenty days. S. O. 6, Div. Pacific, Jan. 19, 1887.

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ORIGINAL ARTICLES.

CAN THE CÆSAREAN SECTION BE SAFELY SUBSTITUTED FOR CRANIOTOMY IN THE UNITED STATES AT THE PRESENT TIME?

Read before the Medical Society of the District of Columbia, January 12, 1887.

BY JOSEPH TABER JOHNSON, M.D.,

PRESIDENT OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Much interest has been excited of late in the improvements which have been made in the ancient and time-honored operation of the Cæsarean section. To Dr. Harris, of Philadelphia, are we mostly indebted for this revival of interest. He has repeatedly pointed out that this operation, which, in the past, has been regarded as almost universally fatal to the mother, can now be performed with great safety, and with the result of saving more lives, when resorted to early, than by any of its alternatives. This statement is made by Dr. Harris after collecting the histories of a comparatively large number of cases in this country and in Europe. These remarkable results have been achieved by a few men, mostly in Germany, who have had a large experience in abdominal surgery, and who brought to their assistance the many improvements which a number of operators had been gradually making, in different parts of the world, in the Cæsarean section for many years. These successful operations have aroused the enthusiasm of a few writers to such a degree that they have been led to declare, with great fervor, and an eloquent display of statistics, that craniotomy upon the living fœtus would hereafter be unjustifiable, and that the improved Cæsarean section must not only be the operation of election in the future, but of necessity also. Thus Dr. Meadows, of London, within the past three months, in a paper read before the British Gynecological Society, upon "The Total Abolition of Craniotomy," was so carried away with the wonderful and surprising figures of Dr. Harris, that he exclaimed, in a sudden burst of enthusiasm: "Where, I ask, is craniotomy now?" Dr. Meadows quite convinced himself, but, according to the record, none of his audience, that craniotomy should be forever abolished from the list of justifiable operations. It was generally agreed, in the discussion which followed, that the best thing ought to be done; that whenever the Cæsarean section offered the best chance it should, of course, be urged upon the family, but that there would always remain a certain small proportion of cases, mostly in primiparæ, where craniotomy would have to be performed.

When this subject was discussed in another society, in our city, two years ago, I took the ground strongly that past experience, as well as the teaching of nearly all the text-books in use by the colleges, declared that craniotomy, when indicated, should be considered the operation of election, and the Cæsarean section the operation of necessity.

In view of the growing success of "the improved Cæsarean section" abroad, and of my growing interest in abdominal surgery, I am inclined to change my views, exactly reversing the position stated above, making the Cæsarean section the operation of election, when possible. This, of course, leaves craniotomy as the operation of necessity; and when necessary, therefore, I would feel compelled to resort to it. I cannot agree with those writers who would entirely abolish it, and who denounce craniotomy as "child murder," as an "abominable crime," as that "murderous operation," as "killing the infant," as the "deliberate and cold-blooded murder of an unoffending child," etc. I think craniotomy, even upon the live child, *may become* a perfectly justifiable operation under certain exceptional circumstances.

Science advances, and as new facts come to our attention, and as the success of abdominal surgery strides on with such surprising and startling rapidity, we are entitled, without being considered inconsistent, to change our views, and to be convinced, by the onward march of events, that new practice, based upon late experience and improved statistics, may be better and safer than the old.

While I should be slow, as a teacher of obstetrics, to allow the writers in the ephemeral and frothy medical journals of the day to offset, with a few newly-acquired statistics, the crystallized teachings of the regularly authorized and recommended text-books, new as well as old, for the guidance of students and practitioners of medicine, I should hail with infinite satisfaction any practice which would give to the mother a better chance for life than craniotomy offers, and at the same time, while not diminishing her chances, afford us an opportunity of saving the child also. I do not think it is sound practice to be governed by the mere statistical intent to save the greatest number of lives without any reference to the value of those lives. The Cæsarean sectionists use an argument which sounds well, and which, for statis-

tical purposes, would undoubtedly carry a point, and perhaps an audience; inasmuch as by the performance of the Cæsarean section more lives could possibly be saved for the census to record among the inhabitants of our country than as if craniotomy were sometimes done. Of course, 50 per cent. of the "lives involved" are lost, as well as a very small per cent. of the mothers, but I thought, when I heard an argument some time ago upon this subject, that the speaker rather strained a point, when he added the 50 per cent. of the already dead or sacrificed fœtuses to the ascertained mortality to the mothers, of the craniotomy operation. I doubt if every one would stop to think about the unborn children, when the mortality of craniotomy would be stated, upon this basis of calculation, to be 50 per cent. higher than the deaths of the mothers would properly place it. Thus, of 100 craniotomies, if the mortality should be stated to be 60 per cent, the general reader might think that sixty of the mothers had perished as a result of the operation; when, according to this mode of making statistics, the statement would mean the death of fifty fœtuses and only ten mothers.

We cannot, as conscientious physicians, be bound in our practice by cast-iron rules, whether they are medical, ethical or theological. As long as the good Lord continues to make human beings to differ so widely from each other, just so long shall we be compelled to judge each case by its own peculiar symptoms, environment, vital force, extent of deformity or obstruction; and be governed to some degree by the wishes of the patient who engages our services.

This is a free country and we, of course, have the inalienable right to refuse to remain responsible where our advice is rejected. But the patient has the same right to refuse to have an operation done which gives her so little chance of recovery as even the improved Cæsarean section does in this country.

If we are in attendance upon a case of midwifery which lasts longer than twenty-four hours, where the powers of the patient are showing positive signs of failure, where the forceps have been tried a number of times and failed, where the head is too far down to resort to version, and where, in order to save the now rapidly sinking mother, a corps of consulting physicians submit to the agonized husband and wife the sad alternative of craniotomy or some modification of the Cæsarean section, and they refuse to permit a cutting operation to be done—what is the attending physician to do? Suppose he has bound himself by some cast-iron rule, or allowed somebody else to bind his hand and his conscience for him, never, under any circumstances, to destroy what little life is left in the long compressed and nearly lifeless unborn fœtus—is this woman (who has engaged this physician to see her safely through her labor) to be left in jeopardy while the fœtus is given the precious hours, to become unmistakably dead, which may decide adversely the fate of the mother also! Those who would refuse to do craniotomy upon the live child, but would be willing to do it if the child were surely dead, will sometimes, while obeying their cast-iron rule, let the mother slip through their fingers also. I should hold with Barnes upon this point, who says, on page 845 of his Obstetric Medicine and Surgery:[1] "On the continent especially, it is still urged by some to wait until the child is dead. If it be admitted—and the conditions of the case involve these postulates—1, that the child cannot come through alive; 2, that the operation is undertaken in order to save the mother, waiting till the child is dead is opposed alike to reason and to humanity. It seems a refinement of casuistry to distinguish between directly destroying the child, and leaving it exposed to circumstances which must inevitably destroy it, and it is risking the very object of our art, to wait for the lingering death of the child until the mother's life is also imperilled."

In speaking of the Cæsarean section, on page 855 same work, Barnes says: "If the operation could be done at a chosen moment, and so improved as greatly to increase the probality of saving the mother, then the already high probability of rescuing the child might turn the scale in favor of the Cæsarean section and against craniotomy. Unfortunately, art has not yet reached this point. The mortality to mothers from the Cæsarean section is still so great, whilst that from embryotomy, in fitting cases, is so small, that we are unable at present to raise the Cæsarean section to the rank of an elective operation."

In view, however, of the success of the improved Cæsarean section, I should be inclined to hold with those who would, if they could, raise the Cæsarean section to the rank of an elective operation; but we should hold ourselves free, in case this elective operation were not elected by those who had the right to vote, to perform craniotomy, upon the live child even, if we believed that by doing so we could save the mother. I should agree with Lusk, 1885 [Science and Art of Midwifery, p. 425] that "If in any case the decision is left to the physician, he should regard the welfare of the mother as of paramount importance. . . . The duty of the physician is, however, to his patient. He is not to constitute either judge or executioner."

As the work of Prof. Parvin has been published within the past month, it may be of interest to record his views as the latest authoritative statement from an American stand-point. Professor Parvin says, upon page 650 of his book:[2] "Some, indeed, have had so strong a repugnance to directly sacrificing the life of the child, that they have done it indirectly, waiting until it died before resorting to the operation; thereby in no sense evading the responsibility for its death, and, at the same time, this delay has added to the perils of the mother.

"The principle of morals upon which most obstetricians rest the right to sacrifice the child for the sake of the mother is a very old one, and has met with general acceptance. That principle, clearly enunciated by Cicero, for example, and sustained, in general, by moralists of all ages, is, that if two lives are in such peril that both cannot be saved, but one will be, by the sacrifice of the other, let that life which is of the least value to the State or to society perish. It is unnecessary to show that the adult woman, with her various domestic and social duties, has a life of

[1] Published in 1885 [only last year].
[2] Science and Art of Obstetrics.

greater value than that of the unborn child, and therefore, while the duty of the obstetrician is to save both when he can, if either is to be sacrificed, let it be that of the latter—in other words, if, in a given case, embryotomy is a less risk to the mother than Cæsarean section, the former should be selected. This is a rule of obstetric ethics which cannot be set aside."

There is an element of unfairness in comparing the statistics of craniotomy as given by Tyler Smith in his book, written as far back as 1858, and by Churchill about the same time, with the improved statistics of 1884–5–6 of the Cæsarean section, done under all the detail of the antiseptic methods, and in the light of all the wonderful improvements in abdominal surgery.

It is my belief that more *mothers* would be saved, and would be put to much less pain and in much less danger, by the "timely" performance of craniotomy, done under all the antiseptic precautions, than by the "timely" performance of the improved Cæsarean section, if we judge by recent reports of the mortality attending this operation in the United States. It is my belief, also, that more *lives* would be saved, if we include those of the unborn fœtuses, by the timely performance of the improved Cæsarean section than by craniotomy, and as the Cæsarean section is a much more conservative and clean surgical procedure than the "horrid and detestable operation of craniotomy," as it is now called by some, I should, with my knowledge of abdominal surgery, *greatly prefer to* do it. One of the chief points I am arguing against is, that it is cruel, unscientific, and impracticable to be bound by any inflexible rule in the management of these unfortunate patients. To "utterly abolish craniotomy," as recommended by Meadows and a few others, would leave us with our hands tied in some cases, and subject us to the mortification of being superseded by a physician who was governed more by the circumstances and necessities of this particular case, than by an unscientific prejudice. Our minds and hands should be free. Cases differ; people differ; obstructions differ; vital force, and the dispositions of patients, so differ that, as conservative physicians, we should act as the requirements of each case are presented to us. A timely and successful Cæsarean section, done before the patient had been exhausted by long-continued, various and unsuccessful efforts at delivery, cannot be fairly compared and quoted against an unsuccessful craniotomy, performed upon a woman who had been in labor several days, who had the forceps tried a dozen times by half as many doctors, who had completely exhausted themselves in their fruitless efforts to pull out the child, and finally, when they are worn out, in the middle of the night, perhaps, and by the aid of a tallow candle, with imperfect instruments, poor assistants and no antiseptics, they do a bungling craniotomy, through parts swollen, dry, and ready to lacerate or inflame.

It is no argument, in favor of always doing the Cæsarean section, because a woman succeeds in doing it upon herself with a carving knife, and closes the abdominal wound with sticking plaster. Neither is it just the thing to compare the marvelous results of Leopold and Sänger, in saving seventeen out of nineteen mothers, and all the children, by the improved Cæsarean section, when they bring to bear all their skill in abdominal surgery, have a corps of trained assistants and nurses scarcely less able than themselves, with craniotomy done under the circumstances just named, by inexperienced operators, and under the worst possible circumstances for success. Such comparisons are odious as well as incorrect. In the practice of medicine or surgery, it is very difficult to make correct comparisons, the cases are so dissimilar.

In Germany physicians can control the circumstances of their operations, and their patients, better than we do in this country. They have better and more opportunities to perform timely Cæsarean sections than we do in the United States. Having more cases of pelvic deformity than occur in America, they have made more thorough and correct studies in pelvimetry than we have, and make their diagnosis and perform their operations earlier than we do, and consequently, I believe, save more of their patients.

An early diagnosis, and the consent of the patient and her friends, to an early Cæsarean section, is more than half the battle. One reason, I believe, for the unwillingness of these unfortunate women, and those directly interested in them, to have this operation done early, is the belief of their physicians, as well as their own fear, that the result will be fatal; and they delay, and resort to other and unavailable means, until they have frittered away golden moments which cannot be regained.

Dr. Harris reports that there has been done, in this country, 144 Cæsarean sections, saving fifty-four or 37½ per cent. of the mothers; (and emphasis seems to be laid upon the point that sixty-four children were living when delivered. Perhaps a dozen or more of those children were dead in less than a week, and perhaps only twenty or ten lived to grow up.) According to the same authority, the first fifty Cæsarean sections done in the United States saved 54 per cent of the women. The last fifty Cæsarean sections done in the United States has saved but 24 per cent., a progress in the wrong direction of over 50 per cent. Dr. Harris adds to this sickening statement the information that, "operations performed in good season, when the condition of the woman was favorable, have saved 75 per cent. of the cases in this country, and 80 per cent. of the children."

These facts must have been culled from a few isolated cases, inasmuch as the last statement of operations done in the last decade, and seven months added to it, "ending August 1, 1886, there were thirty-seven Cæsarean sections—saving only eight women, or 21 23-37 per cent." Thus, with all the improvements in antiseptic abdominal surgery, in the last decade of the 19th century, in the United States, nearly 84 per cent. of the women operated on died. So that, in our country, instead of the statistics improving, they have been steadily growing worse and worse, as shown in the following late statistics and letter of Dr. Harris:

September 17, 1886.	
Cæsarean operations of the United States	144
Women saved, 37½ per cent.	54
Children living when delivered.	64
First 50 operations, saved 54 per cent.	27
Last 50 operations, saved 24 per cent.	12
Operations for decade ending Dec. 31, 1855	25
Women saved, 48 per cent.	12
Children living.	13
Operations for decade ending Dec. 31, 1865	24
Women saved, 45 5-6 per cent.	11
Children living.	10
Operations for decade ending Dec. 31, 1875	36
Women saved, 27 7-9 per cent.	10
Children living.	11
Operations for 10 7-12 years, ending Aug. 1, 1886	37
Women saved, 21 23-37 per cent.	8
Children living.	16
Late operations, nearly 84 per cent. of this division	31

Operations performed in good season, when the condition of the woman was favorable, have saved 75 per cent. of the cases in this country, and 80 per cent. of the children.

It will be seen by this record that the number of operations is gradually upon the increase, and that the results are steadily becoming worse year by year. If we take the last five years—August 1, 1881, to August 1, 1886—we have nineteen operations, ending fatally in seventeen cases, saving but 10 10 19 per cent. Of the children, fourteen were also lost; of which two were destroyed by craniotomy, and one had its skull fractured by the forceps. In this list is not included an operation upon a moribund woman, performed in the interest of the fœtus.

This is a frightful picture! In fact, it makes one sick at heart, in view of the fact that Europe, by the Sänger method, has saved 78 per cent., or 26 women out of 33; and 31 children.[3] There has been very bad management somewhere, and I am inclined to believe that much lies in the fact that American obstetricians have not paid sufficient attention to pelvimetry, and are wanting in the skill that has been acquired in the maternities of the old world, by which they first determine the possibilities of delivery *per vias naturales*, and finding the measure of obstruction, resort promptly to the knife without endangering the life of the woman by intermeddling and useless delay. ROBERT P. HARRIS.

Great stress has been laid by those who would always do the Cæsarian section, and never consider craniotomy justifiable if the child was not known to be dead, upon the recent successes in the Cæsarean section by the "Sänger method" in Germany. But Germany, unfortunately for this argument, is not the United States. To quote from recent authority in the October number of the *American Journal of Obstetrics*, page 1021, by Garrigues, who claims that the Sänger method should as properly be called by his name as by Sänger's, and further, that there is really nothing in this "method" after all, as the most successful operators get on better without using it—Garrigues says: "It is of particular interest to see that one operator, Prof. Leopold, of Dresden, has operated nine times, saving eight women and all the children. The two maternity hospitals, of Dresden and Leipzig together, have had sixteen operations with fifteen maternal recoveries, and the survival of all the children." This, I am glad to admit, is a most successful and glorious record, and one which American operators should strive to equal. But it is not fair or correct to state this phenomenal success as the present standing of the improved Cæsarean operation. You might as well quote the phenomenal success of Mr. Tait, in doing 146 ovariotomies without a death, as the present happy standing of ovariotomy throughout the world, and expect others to obtain the same results.

Garrigues evidently had this same thought in his mind when he wrote, less than a month ago, page 1021—"It is not to be expected that this record will be kept up to its present standard. So far, the excellent results are *due to the fact that* so large a proportion of the cases have been operated on by one man, and a still larger proportion by a few men, all intimately connected, all perfectly familiar with antiseptic precautions, and skilful gynecologists. It is to be expected that when the operation becomes so popular that it is performed by many, and less well prepared operators, the results will again decline proportionately."

Garrigues says, "further, on the other hand, I am not prepared, with several authors, to teach that the improved Cæsarean section should be substituted for craniotomy, and to stamp, as an abominable crime, the destruction of the living fœtus, if by such a sacrifice, there is reasonable hope of a safe delivery for the mother. We must remember that similar antiseptic precautions to those upon which success in the new operation seems *exclusively to turn*, have benefited the operation of craniotomy."

Garrigues then refers to three recent craniotomies done by himself, two upon the living fœtus. All the mothers made an excellent recovery, and at no time presented any serious symptoms—one of them did not even have the slightest fever. In view of the recent successes in the Poro operation, I should feel disposed, in cases where there was a demand for the Cæsarean section, and the parties interested consented to have it done, to go still farther, and remove the uterus, or at least the ovaries and tubes, and thus make it forever impossible for the woman to be environed by the same dangers again.

It has been demonstrated that the success of repeated Cæsarean sections on the same person is greater than first operations, but is nevertheless, a dangerous procedure. I am convinced that the failure of the Cæsarean section to succeed in our country is largely owing to the fact that the operation is performed after the patient has been worn out by prolonged and useless efforts to deliver her. If physicians and patients only believed this operation was the best one to perform and that it should be done early, and that it did not mean sure death, as so many seem to think, this obstacle would be removed and the door opened to a more successful future. Until we can do better than to lose 29 out of the last 37 Cæsarean sections, in the United States, we cannot bind ourselves never to do craniotomy, even upon the living child. According to Harris, of the last nineteen op-

[3] Medical News, Philadelphia, Sept. 18, 1886, p. 317.

arations, (C. S.), seventeen of the mothers died. These nineteen Cæsarean sections were all done within the past five years, and fourteen of the children were lost, a not very brilliant show for American operators. Garrigues saved more mothers than this by doing his three cases of craniotomy. It cannot be claimed that the results would have been improved by the practice of the Sänger method, inasmuch as there have been five Sänger Cæsarean sections done within as many years in the United States, and every one of the women died promptly.

There is something radically wrong, I fear, in our teaching as well as in our practice. If we could control the circumstances and environment of our patients as surgeons do in Germany, I believe we could succeed as well as they do; but physicians as well as people will require a good deal of educating, evidently, before such a happy state of things will be reached in America. While therefore, I should greatly prefer to do the Cæsarean section and should consider it, if called in time, the operation of election, I cannot see that we have reached a position in this country, which would give us the right to "totally abolish craniotomy," and substitute for it at present, an operation which I have shown is so seldom successful as even the "improved Cæsarean section."

I subjoin as an appendix to my paper (with the kind permission of the author, Dr. Wm. H. Parish, of Philadelphia, whose entire article will appear in the forthcoming volume of the Transactions of the American Gyecological Society) extracts from that portion of his paper relating to the Cæsarean section in the United States, and also remarks of Dr. Robert Barnes on Dr. Meadow's monograph referred to above, and which I adopt as a part of my paper.

APPENDIX.

Let us now turn to the mortality attending all Cæsarean operations in the United States. Of 144 operations only fifty-four or 37½ per cent. of the mothers have recovered. Ninety mothers died out of 144 operated on, a truly frightful mortality.

But many of these operations were performed before abdominal surgery had attained its present high degree of success. Has the Cæsarean operation profited by the conceded recent surgical advances? Let us see: Of the fifty operations first performed in the United States, twenty-seven of the mothers, or 54 per cent. recovered; and of the last fifty operations, only twelve of the mothers—*i. e.*, only 24 per cent. recovered. The mortality has steadily increased during recent years, until of thirty-seven women last operated upon, twenty-nine have died; and of the last nineteen operations, seventeen of the mothers have died—a horrible mortality! In these nineteen last cases, all occurring during the last five years, there were fourteen dead children. In the last nineteen Cæsarean sections, then, there were only two mothers saved, and only five children survived. Should not American surgeons and obstetricians hang their heads in shame at such a showing? Is it not time that we should look into the reasons for such shameful fatality following this operation in this country? The results in Europe show with certainty that such terrific mortality is not inseparable from the operation, when rightly done under proper conditions.

The two prime factors in producing such fatality are, doubtless, delay in performing the operation, and the attempts made at other methods of delivery before making the section. Look at the number of children dead, when the operation began! The death of the child could not have been due to the operation, but must have been produced prior to its performance. Of the 144 operations, eighty children were dead. What caused their death? Quite certainly, either manual or instrumental interference, or prolonged uterine contraction. The eighty dead children mean eighty cases either of prolonged labor, or of injudicious interference in some other way by the physician. Eighty dead children mean eighty cases in unfavorable condition for the operation. Notice that there were eighty dead children and ninety dead mothers. How nearly the numbers correspond!

The mortality in this country is attributable largely, then, to delay in operating, or to attempt at delivery with forceps, by version, or by craniotomy. Why this delay, and these injudicious resorts to other methods of delivery? First, The profession has been educated to believe that the operation is almost necessarily fatal; and statistics have been quoted to prove its terrible mortality. We have also taught, in text-books and in lecture halls, that the Cæsarean section is not an operation of election; it has been declared by authority to be the most dangerous operation in surgery. The practitioner has been demoralized into great dread of it; and he is prepared to undertake any other measure first. I have heard a once prominent teacher, now deceased, instruct his large classes, in cases of deformed pelvis, if in doubt: first to try the forceps, and if unsuccessful, to try craniotomy; and if this fails, then to try the Cæsarean operation. It would be equally, or more rational, in the management of an ovarian cyst: First, to try tapping; and if the cyst refilled, to try injecting with iodine; and if not then successful, to try drainage of the cyst; and if that failed to perform ovariotomy.

The delay is not, however, dependent solely upon the dread of the operation: It has frequently resulted from failure to recognize early the degree and character of the obstruction. In the United States large cities and large maternities are few, and medical schools are numerous, and the lectures are too limited in time, and students are taught but little of pelvic deformities and of obstruction in the soft parts. Pelvimetry is almost a closed book, and most young men, entering into private practice, have never seen even a normal labor, nor measured a pelvic canal. Is it surprising that, even later in life, they often cannot determine the degree of pelvic contraction, or of obstruction, when such exists? They cannot recognize the indication for the Cæsarean operation, hence, in part, the delay; or resort to forceps, version, or craniotomy.

The recent European success cannot be ascribed solely to the Sänger method of treating the uterine wound. Notice that in thirty-three operations by this method, in Europe, thirty-one children were saved. What does this indicate? It demonstrates that the operations have been performed early in labor; that forceps, version, and craniotomy had not been resorted to. It demonstrates that the obstetrician recognized promptly the degree of contraction, or character of obstruction; saw the indication and had sufficient confidence in the result to resort at once to Cæsarean section. The saving of 78 per cent. of the woman, under the Sänger method, does not mean that this result was attained merely because of that invaluable method; for in this country there have been five Sänger operations, and all have terminated fatally.

I submit that, in this country, we must recast our views and our teachings as to the dangers attending the Cæsarean operation, and as to the indications for its performance. Medical students must be instructed more fully in the recognition of degrees of pelvic obstruction, so that it will not be necessary for the physician to learn through delay, or through failure with forceps, version, or craniotomy, that a Cæsarean section is demanded.

In the performance of the Cæsarean operation, I will also submit a few essential rules:

1. At once carefully determine the degree of obstruction, and operate early in labor—*i. e.*, as soon as the os is sufficiently dilated to permit drainage of the lochia, and before the rupture of the membranes. Delay is fatal.

2. Operate with full antiseptic precautions; for, of all abdominal operations, no other demands so absolutely that asepsis should be secured; but the spray over the abdomen is unnecessary.

3. Control hæmorrhage by compression of the cervix, either manually or with rubber tubing, but preferably manually.

4. Introduce numerous deep and superficial sutures so as to approximate accurately the muscular walls and serous surfaces of the peritoneum; but do not carry the sutures into the endometrium. The removal of a section of the muscular wall is unnecessary.

5. Carefully protect the peritoneum from contact with fluids, and make a careful toilet of that membrane, if perchance it has been soiled.

6. Administer ergotine hypodermically at the beginning of the operation.

[Remarks of Dr. Barnes, in the discussion on the paper of Dr. Meadows, which he read before the British Gynæcological Society 13th October, 1886, in which he favored the total abolition of craniotomy:]

Dr. Barnes said he disclaimed the part of apologist of craniotomy. He earnestly hoped the time would come when this revolting operation might be abolished. He had worked hard towards this end. Some of the most trying hours he had ever spent had been caused by the conflict between the duty of saving a mother at the sacrifice of her child, and of seeking the safety of the child at the imminent risk of the mother's life.

The problem would be nearer solution could we bring the Cæsarean section in some form to such perfection that the mortality attending it would be reduced to the mortality attending craniotomy. And here he disputed the validity of the statistics cited by Dr. Meadows. Dr. Meadows put the mortality of the Cæsarean section according to Sänger's method at 20 per cent. Admitting this for the purpose of argument, and admitting further that the operation might be so improved as to attain an even smaller mortality, he would still most emphatically protest against the statement that the necessary mortality attending craniotomy approached 20 per cent., or even 5 per cent., excluding the cases of extreme pelvic contraction which forbade the hope of extracting the child after craniotomy, and which all acknowledged should be treated by the Cæsarean section. Craniotomy, done under fair conditions, such as are postulated for the Cæsarean section—that is, done at a chosen time with due skill—did not involve any maternal mortality. This being so, we were driven to fall back upon the long-recognized claim of the mother to be first considered. Now, assuming that twenty mothers out of one hundred, or even ten, or even five, were sacrificed to the Cæsarean section in order to save, say ninety children, might not those doomed mothers rightly plead their prior right to be saved? Her life is in our hands; the circumstances hardly admit of her forming a just judgment. We have to act for her, and are we not bound to do our utmost to save her?

On the other hand, the case for the child is undoubtedly strong. By Cæsarean section there is a strong probability of its survival; under craniotomy it is certainly destroyed. But this does not represent the whole case. This is what happens: A woman, with a minor degree of contracted pelvis, not admitting of the delivery at term of a live child, is delivered by craniotomy. She recovers, and time after time in subsequent pregnancies, labor being induced at seven or eight months, she bears a live child. Add these children saved to the mother, and it might happen that the aggregate lives, maternal and infant, saved by craniotomy would compare favorably with the aggregate saved by Cæsarean section.

Undoubtedly very much had been gained, and much more would be gained, in the direction of lessening resort to craniotomy. Still he feared he must feel that the abolition of craniotomy was as yet an aspiration, and not an accomplished fact.

THE TREATMENT OF CROUP WITH DIGESTIVE SPRAYS.

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Pseudo-membranous laryngitis is always a grave affection, even under the most favorable circumstances, and any treatment which promises even slightly to diminish its mortality, is worthy the earnest attention of practical physicians. Four thousand

deaths are said to occur from it annually in England. If I offer here the tedious description of a series of cases treated by a method not new in principle, and attended by results not very brilliant, I hope that my communication may be received in a scientific spirit. I lay claim only to great perseverance in the treatment described, and I hope to prove that its details are readily carried out by parents, and kindly submitted to by the little patients.

I have treated sixteen cases with inhalations of solutions of one or the other of the digestive ferments, thrown in a spray by a steam-atomizer. The list includes sporadic, sthenic cases, as well as those of an asthenic nature, secondary to diphtheria of the fauces, and one secondary to measles. Two successful cases in which I at the time diagnosticated croup below the vocal cords, I have decided to ignore in estimating the results of treatment, having probably misinterpreted the phenomena, although Gerhardt states that all the symptoms may be absent in diphtheritic laryngitis, while they may be present in other diseases causing laryngeal stenosis. One fatal case I must also exclude, patient having been in the asphyxic stage when treatment was begun.

Let us now see how far the diagnosis can be substantiated in the remaining thirteen cases, by examining the following points:

1. The Presence of Membrane in the Fauces.—There is great diversity of opinion as to its significance. Most of the older authors, and most American and British authors to-day, recognize two distinct diseases, true membranous croup and laryngeal diphtheria; yet most of these even, and among others Wagner, admit the presence of an exudation in the fauces also in the former disease, although secondarily; while many unicists, among them Steiner, admit the existence of a localized laryngeal diphtheria. Niemeyer, a dualist, takes it for granted that the stenotic symptoms are caused by a coexisting laryngeal membrane when an exudation is visible in the pharynx. With Squire a single point of pharyngeal exudation decides for diphtheria of the larynx, while Monti, although he believes croupous laryngitis to be much rarer than diphtheritic, if I understand him correctly, thinks that croupous laryngitis may occur as a complication of faucial diphtheria.

In seven of my cases a distinct membrane was seen in the fauces. Now, we may think it tolerably certain that a pseudo membrane caused the obstruction in these seven cases at least; but the coexistence of catarrhal laryngitis with pseudo-membranous pharyngitis, first described by Trousseau, which J. L. Smith thinks must be rare, is said by Guersant to be quite frequent among the children of the upper-classes in Paris. I can see how the hyperæmic swelling surrounding a diphtheritic patch might extend to the epiglottis or vocal cords and produce symptoms of laryngeal stenosis, and I can also imaging the existence of a very small spot of exudation in the larynx without giving rise to much obstruction, so that any treatment would seem to abort the disease.

2. Dyspnœa.—Unless we have watched the development of croup secondary to some other disease, we generally find the dyspnœa alarming at our first visit, but from it alone we cannot always differentiate betwen true and false croup. Loud stridulous respiration and suffocative attacks are present in both forms. According to Steiner the dyspnœa is never so extreme in the latter, and the suffocative attacks occur earlier, although not so frequently as in the former disease. In all of my cases the dyspnœa was marked, but of course not so extreme in the favorable cases, where treatment was begun early. Jacobi lays particular stress upon its presence during expiration as well as inspiration in membranous croup. As my attention had not been directed to this point until lately, I failed to make any observations regarding it in my cases. The respirations were generally not much increased in frequency, and in proportion to the frequency of the pulse they were retarded. When they became very frequent, I took it for granted that the bronchi or lungs had become involved, and accordingly gave an unfavorable prognosis. The only measure which I know of the amount of stenosis is inspiratory recession of the epigastrium and attachment of the diaphragm. It was present to a greater or less extent in all of my cases, even in the two which I have excluded from the statistics as having probably been cases of false croup, although Meigs and Pepper say: "The persistence of a deep sulcus around the base of the chest and of recession of the lower end of the sternum and epigastrium during inspiration, for even a short time, is in the highest degree characteristic of the presence of false membrane in the larynx."

3. Aphonia.—According to Loomis and Steiner, the voice never becomes whispering or completely extinguished in spasmodic croup. According to Meigs and Pepper, it rarely does in false croup, while it always does in the membranous disease. The cough is also affected by the aphonia in true croup. Meigs and Pepper compare it to the sneezing of a young kitten, and say that they "have never heard this in catarrhal laryngitis, no matter how severe." The aphonic cough was present in all of my cases, even in the two which I have decided to exclude, but in these two the speech and cry were not at all hoarse. The so-called "croupy" or "brassy" cough which Sir Thomas Watson describes as characteristic of croup, I regard, with Trousseau, as a sign of the *absence* of membrane in the larynx. I have met it in numerous cases of spasmodic laryngitis, but only once in true croup, and there its sudden appearance at night at first led me into a mistaken diagnosis.

4. Totality of Symptoms.—Having seen that no one of the above-mentioned symptoms can be regarded as strictly pathognomonic of pseudo-membranous laryngitis, let us consider them jointly. Niemeyer says: "They can all be present temporarily in catarrhal swelling of the vocal cords." In that case, however, the symptoms are generally alarming from the start, the onset almost always being at night, and subside by morning, while pseudo-membranous laryngitis, as a rule, comes on insidiously, increasing for several days, and is not attended to until a dangerous stage has been reached. Hartshorne cautions us always to "pay prompt and careful attention to a day-time bark *with* fever." Ziemssen states that in

pseudo-croup recovery takes place by the ensuing morning. Gerhardt, in the absence of pharyngeal implication and glandular enlargement, would "rest the diagnosis for the first few times on the efficacy of remedies and the course of the disease, remembering that an exudation lasting more than thirty-six hours speaks decidedly for diphtheria, while in false croup complete well-being has occurred as early as the next morning." Meigs and Pepper recognize a severe form of spasmodic croup, with all the symptoms of the true disease, but they state that its duration is rarely longer than two or three days, that of true croup rarely less than six, often eight or ten days.

In my successful cases, after slight hoarseness of three or four days' duration, the alarming symptoms lasted at least four days, in one case over a week, with but slight remissions in the day-time, and nocturnal exacerbations of dyspnœa occurred for a week or more longer. Loomis says: "If recovery takes place, it is slow, weeks often elapsing before the voice returns, during all of which time the patient is liable to severe attacks of dyspnœa." Cormack seems to think that all the successful cases described in the classic works of Home and Cheyne, and many of the fatal ones, were cases of infantile laryngitis, the greater severity of symptoms in children as compared with those in adults being due to the narrowness of the glottis in the former. This theory is supported by the laryngoscopic investigations of Rauchfuss and Dehio, which showed that in acute laryngitis with œdematous infiltration below the vocal cords, especially where the cords are inflamed and swollen, there is laryngeal stenosis with the same dyspnœa, cough, and loss of voice that we have from membranous obstruction of the rima glottidis. Flint and Meigs and Pepper also think it necessary to see the membrane, either *in situ* or in the expectorated or vomited matters, in order to make an absolute diagnosis. I must confess that this requirement was not met in a single one of my cases, but I thought it possible that the membrane had undergone molecular disintegration under the digestive influence of the spray.

Should a supposed catarrhal croup turn out in reality to be a pseudo-membranous laryngitis, one consolation remains. We can smooth over our mistake by citing Loomis and Hartshorne as authority that the former disease can develop into the latter, suppressing the fact that most authors state that children subject to spasmodic croup rarely become affected with the membranous form.

Having shown that an absolute diagnosis could not be made in any of my cases, and leaving it to you to estimate the probabilities in each individual case, allow me to pass to the consideration of my method of using the peptonizing ferments. I claim no originality, but think I have used digestive sprays since a time when they were but little mentioned in current literature. About five years ago I read somewhere that Rossbach (?) was using a spray of papayotin solution to dissolve false membranes. I utilized the principle in the first case of croup, and that a bad one, coming under my treatment, but substituted pepsin for the expensive papayotin, and as patient recovered, I have used the method ever since, but of late in a modified form.

The mixture was prepared by adding grs. x Jensen's pepsin, dissolved in glycerine, to oj water, and acidifying with ℥ss lactic acid. This solution, thrown into a spray by a Codman and Shurtleff steam atomizer, was directed towards the child's mouth and nostrils continuously, day and night, until the worst danger seemed over, generally about a week, and after that during the nocturnal exacerbations for about a week more. Of course, it is not probable that much of the fluid reached the larynx, but it is an open question whether pepsin acts by its quantity, or only in a catalytic manner. Dr. Henry Dwight Chapin has shown by experiments with trypsin solutions, that the spray dissolves membranes relatively more quickly than immersion.[1] The person using the atomizer must be constantly on the alert to follow any movement of the patient's head and keep the spray playing on the mouth and nostrils; the child then becomes restless, opens its mouth to cry, takes a deep inspiration, and the cough proves that the fluid enters the larynx. Any one can satisfy himself of this by trying it on himself. Children, after a short time, do not mind the spray much, and in all except the most fulminant cases the relief has been marked and prompt. The child usually soon falls asleep, and at this time the spray can be used continuously without trouble. It is doubtful whether any of the fluid enters the respiratory passages during sleep, but the steam alone must do considerable good. If the dyspnœa again increases, the child awakes, and, if necessary, can be made to breathe through its mouth for awhile. Older children sometimes ask for the spray, and one (case 8) even for some time after full recovery, could be put to sleep only when the "little stove" was burning beside his crib.

If the membrane form again faster than it can be digested, the relief is only temporary; and after the stenosis has become extreme, there is not enough air-current through the trachea to carry the spray where it is needed, but after the performance of tracheotomy or intubation of the larynx per os, digestive sprays ought to be of immense benefit.

One drawback of the acid pepsin spray is that it causes considerable erythema, and sometimes swelling, of the face. This can be avoided to a certain extent by anointing the exposed surfaces with cosmoline and covering the eyes with a cloth. In my last four cases I have obviated this difficulty by substituting an alkaline pancreatic solution, prepared as follows: R. Ext. pancreatis (Fairchild Bros. and Foster's) ℥j; glycerine, q. s. ut. ft. sol.; nat. bicarb., ℥ij; sol. thymol (1 : 1000), ℥iv (to prevent decomposition of the ext. pancreas, which occurs very quickly); aquæ, q. s. ad. oij, filtered. These solutions I have used in large quantities, generally a quart during the day, and an equal quantity at night, and sometimes much more. Perhaps their strength could be increased with advantage.

Dr. Henry Dwight Chapin describes a hand-ball atomizer with tongue-depressor, combined in one instrument, by means of which a concentrated solu-

[1] Medical Record, vol. xxvii, p. 257, March 7, 1885.

tion of ext. pancreatis, gr. xv: ℥j, can be thrown more directly into the larynx for a minute or so every fifteen minutes.[2] In severe cases this might be occasionally used together with the constant spray from the steam atomizer. I have never had any trouble in getting parents to persevere with the treatment, but in one case, where, after the child had materially improved, even at night, the suction tube became stopped soon after my morning visit, by the scum always present in the pancreatic solution, and by evening the child was past all hope. I had explained to the parents how to cleanse the tube with a small feather from the large end, but, not being very intelligent, they failed in their attempts (case 15).

In New York they use a trypsin-spray, and according to Dr. B. M. Van Syckel, this ferment can be extemporized as follows: Add 5 grammes (℥j grs. xvij) ext. pancreatis to 500 cc. (℥j ℥vi) of a 1 per cent. solution of salicylic acid, and digest in a water bath at 37° C. for four hours; filter, and make slightly alkaline with bicarbonate of soda.[3]

Of course, other treatment must not be neglected. I have hitherto used a slice of salt pork externally, but think I shall hereafter try hot poultices. The body must be protected from the wet spray by being wrapped in shawls or oil-silk. Increased secretion diminishes congestion and aids in loosening the exudation. This I have striven to promote by pilocarpin mur. in doses of gr. $\frac{1}{48}$ to gr. $\frac{1}{24}$ q. h. or q. 2 h., day and night. To the pilocarpin mixture I add a few drops of dilute muriatic acid to aid solution, tr. ferri chlor., am. mur., and brandy to forestall the depressing effects of the pilocarpin. As I have once or twice seen considerable temporary collapse from the pilocarpin, I think I will omit it in asthenic cases occurring during epidemics of diphtheria. But it is necessary also to *prevent* the new exudation of pseudo-membrane. This I have aimed to do with small doses of calomel, gr. $\frac{1}{20}$ to gr. $\frac{1}{5}$ q. h. or q. 2 h. day and night, given between the doses of pilocarpin. If there is much fever, I give occasional doses of quinine. Nourishment is generally taken in sporadic cases, but must be insisted on in the asthenic, combined with stimulants. I do not believe in frequent large doses of mercury, although I generally begin treatment with a gr. v–gr. x dose of calomel, which I repeat once or twice during the following days. Mercury never salivates small children, but often produces sudden and profound asthenia without salivation, as the personal experience of several physicians testifies.[4] The treatment of this dread disease must be active from the very beginning, but should never be reckless. I would never dare to use the heroic doses of corrosive sublimate advocated by Jacobi, gr. ss. daily for many days in an infant of 1 year. J. Lewis Smith, a dualist, uses large doses of mercury in croup, but avoids them in asthenic diphtheritic cases. Opiates I would only give when the cough is distressing, and then only in small doses, as they have seemed to me to hasten the occurrence of the asphyxic stage. I prefer Dover's powder, as it keeps up a gentle diaphoresis, and stimulates the secretion of mucus.

Emetics I have hitherto studiously avoided, as I once saw a patient, whom I treated before I had begun to use pepsin inhalations, die of suffocation during the retching produced by an emetic. However, I shall hereafter try an occasional dose to expel mucus and membrane disintegrated by the spray and collected in the air passages, because Meigs and Pepper claim that of thirteen cases where they pushed emetics, ten recovered without, and one with, tracheotomy, while of eight others all but one died.

Where it is often impossible to make a definite diagnosis, we must of course be careful in estimating the results of treatment. On the point of prognosis there is even greater diversity of opinion than on that of diagnosis. Wood, of Philadelphia, gives the mortality of croup as low as 2 per cent. This is obviously a different disease from that described by Ware, who states that of twenty cases nineteen die. Then we must bear in mind that many authors recognize two distinct diseases, the one membranous croup pure and simple, the other laryngeal diphtheria, of which they find the latter much more fatal than the former. Monti has seen spontaneous recovery in not more than 2 per cent. of his cases of idiopathic croup, 2 per cent. more yielding to the lactic acid spray, while 50 per cent. recovered after tracheotomy; but in descending croup with enlarged glands and constitutional symptoms, he does not think that more than 25 per cent. can be saved by the operation. Even those writers who maintain the identity of croup and diphtheria, admit that sporadic cases recover more frequently than those occurring during an epidemic; but in their treatment they generally include tracheotomy. Thus, of a large number of cases treated by Steiner only three recovered without tracheotomy; with the operation his mortality was 60 or 70 per cent.

I have been able to obtain consent to perform tracheotomy but once, and then only after the child was moribund. Intubation by Dr. O'Dwyer's instruments would probably be more readily allowed,[5] and I can conceive it possible that in one or the other of my fulminant cases the operation might have gained time for the spray to act. Dr. F. E. Waxham, of Chicago, writes me that of fifteen cases treated by him by intubation, seven have recovered.

Meigs and Pepper have had sixteen deaths out of thirty-five cases, their favorable results apparently being due to the free use of emetics.

Secondary croup occurring in the first week of diphtheria seems to be much more fatal than that occurring in the second or third week. Dr. J. Lewis Smith thinks it is scarcely possible to cure more than one-eighth of the cases of the former, while of the latter one-third may be saved by the early and constant or almost constant use of trypsin inhalations.[6]

Now as to my own results. Before I began to use the treatment above described, I had three cases of croup, all fatal; but they were all very severe and

[2] Medical Record, vol. xxvii, p. 257.
[3] Medical Record, vol xxvii, p. 207, Feb. 21, 1885.
[4] "Diphtheria and its Management," by Dr. Ed. Winters in Med. Record, vol. xxviii, p. 622.
[5] Med. Record, Feb. 21, 1885, vol. xxvii, p. 207; also Jour. Amer. Med. Ass'n., May 2, 1885, vol. iv, p. 498, and ibid., Oct. 24, 1885, vol. v, p. 460.
[6] Med. Record, vol. xxvii, p. 543.

apparently infectious, two occurring in families in each of which another child died of the same disease, either just before or soon after, and the third in a girl of 15, convalescing from typhoid fever, infected by a brother with diphtheria.

Of the thirteen cases which I will utilize in estimating results, six recovered. All of these ran a slow and protracted course, and hence gave the treatment some chance to succeed. Of the seven fatal cases, all but one (case 7) ran through the different stages very rapidly. Of seven cases where a distinct membrane was seen in the fauces, three recovered. Loomis says: "When the diagnosis is based upon the presence of the membranous exudation in the tonsils and epiglottis, recovery seldom occurs."

I have tried to compare my results with those of others reported in the Dubuque Health Office. Here again we must bear in mind the probability of frequent errors of diagnosis, especially by irregular practitioners, and of fatal secondary cases simply reported as having died of the primary disease. On the other hand, cases ending in recovery may have been not reported at all. I will select the report of the health physician for the year ending February 28, 1883, as the disease was then rather prevalent, and hence more liable to be fatal, and errors of diagnosis less likely to occur. During that year there were reported 37 cases of croup, with 21 deaths. Of these, 32 were treated by other physicians and by methods unknown to me, with 19 deaths, a mortality of 60 per cent; 5 were treated by me as above described, with 2 deaths, a mortality of 40 per cent. Of the cases which recovered, one occurred during convalescence from measles (case 5), when, according to Steiner, true croup is much more common than false, while the reverse holds true in the beginning of measles.

Both Steiner and Monti lay stress upon the rarity of recovery from croup occurring in the desquamative stage of measles, the latter never having seen one get well. In the second case (case 6) the extensive pharyngeal exudation, which had been seen by the mother, had disappeared when I was first called, but the submaxillary glands were much enlarged. The third case (case 8), may have been one of severe spasmodic croup, although the long duration of the prodromal stage (four days), the first occurrence of suffocative attacks at noon, the severity of the symptoms, and the slow recovery, speak rather for pseudo membranous obstruction. Of the fatal cases, the first (case 4), was fulminant, and time was lost by treating it at first for spasmodic croup; in the second (case 7), the treatment had a pretty fair trial, but failed to save the patient.

Following is a brief review of my cases:

Case 1.—Frank P. Treated him for sore throat, October 16, 1881, with cinchonidiæ sulph. and tr. fer. chlor. internally, and had throat swabbed with acid, carbol. and liq. ferri subsulph. in glycerine. Exudation in pharynx on 20th. Now added to other treatment pilocarpin mur. gr. $\frac{1}{48}$ q. 2 h.

October 22, add gr. iv quiniæ sulph. t. i. d. for fever. Considerable cough, for which gave morphine and ää hydrocy. dil.

October 24. Brush throat with pure tr. ferri mur. During following night laryngeal stenosis suddenly developed, while membrane in fauces had disappeared. Continuous pepsin-spray day and night.

October 25. Dr. J. M. Boothly saw patient in consultation in evening, and at his suggestion, am. mur. and cinchonid. were given q. 2 h., alternating with these calomel gr. $\frac{1}{5}$, tart. em. gr. $\frac{1}{15}$ pulv. Doveri gr. ss q. 2 h. Pilocarpin and spray continued. Stimulants and milk frequently repeated.

Condition remained critical for several days. Some improvement on 28th, and considerable by 30th, but now considerable cough. Spray continued some time longer, at last only at night. Aphonia remained for some time.

Case 2.—Mary U., æt. 4 years, taken with diphtheria on Dec. 2, 1881, while a brother was convalescing from sore throat with enlarged submaxillary glands. Cinchonid. sulph. gr. iv t. i. d., pilocarpin gr. $\frac{1}{24}$ q. h. Some improvement after a few days, when, after getting up, croupy symptoms began to appear and were well developed by the 8th. Alternated with pilocarpin increased to gr. $\frac{1}{20}$ q. h., calomel gr. $\frac{1}{6}$ and pulv. Dov. gr. ss q. 2 h. Pepsin-spray continuously.

December 16. Pilocarpin q. 2 h., and tr. ferri mur. gtts. ij added to each dose.

December 19. Patient slowly improving, but still considerable obstruction at night. Added tart. emetic gr. $\frac{1}{24}$ to each dose of calomel.

December 23. Convalescent, but weakness of heart for which gave quinia, iron, nux vomica and digitalis. Spray at night for some days longer. Last child in family came down with diphtheria.

Patient got out of bed on 30th or 31st. Aphonia remained complete for about two months.

Case 3.—Olivia H., æt. 1 year 9 months. Slight exudation had existed in fauces for four days when I first saw the child on January 6, 1882. Hoarseness had been increasing about thirty-six hours, and stenosis was so marked that an unfavorable prognosis was given. Pilocarpin mur. gr. $\frac{1}{32}$, am. mur. gr. $\frac{1}{4}$ q. h. Cinchonid. sulph. gr. j q. 4 h. Continuous inhalations of pepsin-spray.

January 7. Respiration frequent, fever higher, probably indicating lung implication. Mustard poultices to chest, covered by oil-silk. Tracheotomy refused and not urged on account of probability of lung trouble. Symptoms increased in severity until death occurred December 8, 6:30 P.M. Duration of whole disease six days, of laryngitis three days, of treatment forty-two hours.

Case 4.—Peter M., æt. 3 years. Called on night of April 9, 1882. Sickness began three days ago with cough. Croup symptoms came on suddenly this evening. Thinking it a case of spasmodic croup, I vomited the child with sulphate of copper, and prescribed tartar emetic and sulphate of morphia ää gr. $\frac{1}{64}$ q. h. Much worse next morning. Cinchonid. sulph. gr. iv q. 4 h., pilocarp. gr. $\frac{1}{24}$ q. h., and continuous pepsin-spray. Patient died at 3 P.M. Duration of disease five days. Pepsin inhalations only four or five hours.

Case 5.—Francis B., æt. 3½ years. About a week after an attack of measles she was taken with hoarse-

ness, which gradually increased for several days, until when I first saw her, on July 6, 1882, symptoms of stenosis and aphonia were well marked. Cinchonid. sulph. gr. ij q. 4 h., pilocarpin gr. $\frac{1}{24}$ with tr. ferri mur. q. h. Pepsin inhalations day and night.

July 8. Added to other treatment calomel gr. $\frac{1}{16}$ and pulv. Dov. gr. ss q. 2 h., after bowels had been moved with grs. v calomel.

July 9. Ammoniæ carb. gr. j every two hours.

July 10. Convalescent. Tr. ferri mur. gtts. ij q. 2 h. Last visit on July 11, but spray used at night for slight exacerbations for a week longer.

Case 6.—Albert M., æt. 3 years 10 months. Sore throat for several days with glandular enlargement. Mother said fauces had been covered with whitish exudation, but I could see none when called on October 24, 1882. Gradually increasing hoarseness for several days, now aphonia and symptoms of laryngeal stenosis. Pilocarpin gr $\frac{1}{24}$, am. mur. gr. $\frac{1}{8}$, tr. ferri mur. gtts. ijss, q. h. Continuous pepsin inhalations. Whenever atomizer became deranged for a short time, symptoms increased in severity. Dr. J. H. Wilson saw case after two or three days and agreed in diagnosis.

October 29. Ung. plumbi iod. to enlarged submaxillary glands.

October 31. Last visit. Continue inhalations at intervals, as necessary, for a few days longer.

Case 7.—Lisetta R., æt. 4 years 4 months. Gradually increasing hoarseness and stridor for several days, until stenosis was far advanced when I first saw her on evening of December 17, 1882. Complete aphonia. Continuous pepsin inhalations. Pilocarpin gr. $\frac{1}{48}$, tr. ferri mur. gtts. jss q. h. Cinchonid. sulph. gr. j q. 4 h. Tracheotomy refused. Patient became progressively worse, respirations hurried, high fever, and death occurred at noon of December 19, apparently from lung implication. Duration of sickness one week, of treatment forty-two hours.

Case 8.—Karl H., æt. 3 years. Treated patient January 20, 1883, for cough with slight hoarseness. Did not see him again until 31st. Hoarseness rather worse, but did not think of croup. Sent for at noon of February 1, and found symptoms of croup well developed with deep sinking in of epigastrium and base of thorax inspiration. Immediately began with continuous pepsin inhalations and relief marked. Internally gr. ij cinchonid, sulph. q. 4 h., and pilocarpin mur. gr. $\frac{1}{32}$ with tr. ferri mur., am. mur., and brandy q. h. day and night. Some improvement by February 5. Added to other treatment gr. $\frac{1}{24}$ calomel and gr. $\frac{1}{3}$ pulv. Dov. to prevent reformation of membrane. Whenever spray was discontinued for a short time, symptoms increased in severity.

February 6. Omitted pilocarpin. Ferri et quin. cit. t. i. d. Atomizer was used about two weeks, but during last few days only at night when dyspnœa still existed.

Case 9.—Mathias Sch., æt. 5 years, living seven miles in country. Called on evening of February 20, 1883, and found child in last stage of croup. Did not examine fauces. Child died two hours after treatment was commenced, and after an illness of five days.

Case 10.—Leonard L., æt. 5 years 11 months. Passed through severe attack of scarlatina anginosa with faucial exudation, in 1881, making a slow recovery. Had been sick about four days when I was called on October 15, 1883, but had gone to school until the day before. Found extensive diphtheritic exudation in fauces, and laryngeal stenosis far advanced. Pilocarpin gr. $\frac{1}{24}$, tr. ferri chlor. gtts. ijss, am. mur. gr. ss q. h. Swab throat every hour with carbolic acid and liq. ferri subsulph. Continuous pepsin inhalations begun after supper.

October 16, in morning much worse. Added calomel gr. $\frac{1}{20}$, and pulv. Dov. gr. $\frac{1}{3}$ q. h. Pilocarpin increased to gtt. $\frac{1}{20}$, q. h. Distressing cough almost constantly. Still worse in afternoon. Some relief followed an emetic dose of cup. sulph. Eased cough with small doses of opiates. At 8 P.M. membrane seemed looser, wherefore gave large doses of cup. sulph., but nervous sensibility so obtunded that they would not even produce nausea, and child died in a short time, twenty-four hours after beginning inhalations, and five days from beginning of sickness.

Case 11.—Josie B., æt. 14 months. Stenosis had been gradually increasing for nine days, until I was finally called November 6, 1883, at 4 P.M. Unfavorable prognosis. Continuous inhalations of pepsin-spray. Internally, pilocarpin gr. $\frac{1}{32}$ and tr. ferri mur. gtts. ij q. h. Also, calomel gr. $\frac{1}{12}$ q. h. Eight P.M. much worse.

November 7. Grew rapidly worse to noon. Tracheotomy mentioned but not allowed until 4 P.M., when child was in asphyxic stage. Dr. J. S. Lewis was immediately summoned to assist in operation; but we feared child would die before we could get ready. A few whiffs of chloroform were given. Trachea was reached in a few seconds without appreciable hæmorrhage, and promptly opened, but in enlarging the opening the churning motion of the larynx caused the innominate veni (?) to be punctured by the knife; at any rate, considerable hæmorrhage ensued. The smallest tracheotomy tube was too small for the small wind-pipe. Immediately introduced silver male catheter, but patient died the same moment, twenty-four hours after beginning of treatment, and ten days after initial hoarseness.

Case 12.—Annie T., æt. 7 months. Scrofulous. Symptoms of croup came on January 1, 1884, at 1 A.M., after slight prodroma of several days' duration, and were well developed when I saw patient. Began immediately with continuous pepsin inhalations. Internally gr. $\frac{1}{32}$ pilocarpin q. h.

January 2 gave also calomel gr. $\frac{1}{20}$ q. h. with pulv. Dov. $\frac{1}{16}$.

January 4, added to pilocarpin mixture gr. $\frac{1}{500}$ corrosive sublimate, tr. ferri mur. gtts. ij., am. mur. gr. $\frac{1}{8}$ pro dosi.

January 5, returned to calomel. Symptoms became considerably milder from beginning of inhalations, but increased in severity whenever apparatus got out of order, which happened several times, and whenever spray was resumed stenosis became much less alarming. Gradually improved to January 8, when tr. opii deod. gtt. $\frac{1}{4}$ q. 2 h. was given for severe cough.

January 9, last regular visit for the time being, but patient was kept under observation for some time longer, during which time there was more or less dyspnœa at night, wherefore spray had to be used at those times, and always with marked benefit. Child remained sick for a long time, passing successively through whooping-cough, pneumonia, and gastro-intestinal disorders, and in August of same year had an attack of undoubted diphtheria, with glandular enlargement.

The last fact would rather militate against the identity of croup and diphtheria, provided the child had true croup in January, as the long duration of the stenosis would seem to indicate, while the sudden onset at night rather speaks for spasmodic laryngitis. Almost two years later the same child was taken in the middle of the night with croupy symptoms more alarming to the parents than those of the previous attack, but on that occasion I promptly excluded true croup, and the recovery by morning under simple treatment proved the correctness of the diagnosis.

Case 13.—Annie W., æt. 3 years. Treated her three months ago for acute Bright's disease, of which the cause could not be discovered, and two weeks ago for bronchitis, which developed into lobular pneumonia. Had not seen her for several days, as she seemed convalescent. On the night of April 8, 1885, she was taken with croupy symptoms, which the mother relieved temporarily with a dose of hive syrup. Next morning, breathing accelerated, but not stridulous. Grew worse until I saw her at 7 P.M. Considerable fever, pulse 150, respiration 57, and of the character indicating stenosis of larynx and trachea, with recession of supra-clavicular and supra-sternal fossæ, as well as of border of ribs, during inspiration. Auscultation showed only prolonged expiratory sound, no râles of any kind. Pain in throat; no exudation visible. No hoarseness of voice in speaking, but cough aphonic. Diagnosticated ascending croup, beginning in the bronchi, which has not yet reached the vocal cords. Gave grs. v calomel. Pancreatic spray to be used all night. Pilocarpin mur. gr. $\frac{1}{2}\frac{1}{4}$ q. h. Breathing soon became easier, although still stenotic, and patient slept all night with the spray playing in her face.

April 9, stool at 5 A.M. At 8 A.M. respiration 54, pulse 150; no stridor, but some drawing in of diaphragmatic attachments during inspiration. Prolonged expiratory sound, some dry râles. Ate a soft egg for breakfast. Calomel grs. x, continue other treatment. Ate some dinner. Played all afternoon and had two liquid stools. Six P.M., respiration 45, dry râles, no longer recession of lower ribs. Used only steam with atomizer during following night.

April 10, patient playing, pulse 120, breathing accelerated but noiseless. Made a prompt convalescence.

The above case I will exclude on account of quick recovery.

Case 14.—Karl H., æt. 8 months, brought to office April 21, 1885, with very loud wheezing in- and expirations, little if any hoarseness when crying, but high-pitched, almost completely suppressed cough, no fever; all these symptoms of two weeks' duration. Playful during day and sleeps all night in spite of the dyspnœa. Auscultation of lungs negative, as stridor in trachea masks everything. Thinking it to be a catarrhal affection, I prescribed am. carb. and tr. sanguin. āā gr. $\frac{1}{3}$ q. 2 h., with hot poultices of linseed and mustard to chest. Wheezing soon improved some, but on 23d I was sent for in haste at 5 P.M. Wheezing much worse, with inspiratory recession of supra-clavicular and supra-sternal fossæ, xyphoid cartilage and free border of ribs. No fever. Respiration 48 to 56. In spite of this, child was excessively and wildly playful, laughing, crowing, kicking all the time, so that friends who came in thought it under the influence of liquor, although none had been thus far given. I now prescribed pilocarpin gr. $\frac{1}{4\,8}$ q. h., with brandy, no iron, and an initial dose of grs. v calomel. The atomizer was used constantly, but at present only water was used in the spray. Calomel operated several times, and child slept well during intervals of taking medicine. Vomited once.

October 24. Respiration seemed somewhat slower, but could not be counted, as child's excitement continued. Coughing spells more severe, child turning red in the face during the attacks. Found child asleep in the evening. Respiration 32, pulse 132. Increased pilocarpin to gr. $\frac{1}{3}\frac{1}{2}$ q. h. Spray used only during sleep, as child was too wild when awake.

October 25. Stridor increasing, and more like that of croup; cough more aphonic. Hands cold. As symptoms seemed to be increasing under water spray, and diagnosis of croup more certain, the pancreatic spray was substituted. Pilocarpin gr. $\frac{1}{3}\frac{1}{2}$ only every two hours, as salivation has been considerable. Atomizer became deranged for awhile and cough became still more suppressed. Child was restless and feverish. Ten P.M., collapse, cold, clammy perspiration, pale, no cyanosis, ceased breathing for a few moments, then vomited large quantities of glairy mucus; after this some improvement of stridor and cough; pulse 132, full, respiration 40, more moist. Thinking that the pilocarpin had caused the depression, it was diminished to gr. $\frac{1}{4\,8}$ q. 2 h., and the salivation then ceased, and calomel was now added, gr. $\frac{1}{2}\frac{1}{4}$ q. 2 h. From this time gradual improvement to 27th, when respiration during sleep, 28; no more recession of ribs. Pilocarpin stopped on 29th, but resumed again on November 2d, as respiration again became more stridulous.

November 3. Oil-silk jacket instead of poultices.

November 7. Slight recession of ribs. Chlorate potash gr. j, q. 2 h.

November 9. Stopped atomizer. Some wheezing when awake, but breathes noiselessly during sleep.

November 13. Breathes much louder, so that the stridor can be heard through two rooms, yet no dyspnœa whatever when asleep.

November 14. Wheezing only during expiration. Sounds very much like asthma, yet the stridor is distinctly in the larynx and trachea; no râles in chest.

November 15. Has been taking iod. pot. several days, which has produced iodism.

November 18. Expiration whistling. Boils have been forming on head, and muco-purulent and bloody casts are discharged from nose.

November 20. Breathing natural.

November 28. Aphthæ of tongue.

December 1. Otitis media, which has existed for several days, has ended in perforation of left drum-membrane.

December 10. Last traces of aphonia of cough now gone.

December 12. Double pneumonia, which underwent resolution in about a week, when a boil formed in left ear and broke.

January 8, 1886. Still considerable cough and discharge from left ear.

The above case I am now inclined to consider one of chronic catarrh, beginning in the larynx and trachea, ascending into the nares and middle ear, and descending into the bronchioles and air vesicles, and the improvement following the use of the digesting spray was probably only a coincidence.

Case 15.—Julia K., æt. 1 year, scrofulous child, has been sick a good deal, almost dying of enterocolitis last August, living in the basement of a damp house. On morning of November 18, 1885, during cold, wet, foggy weather, was suddenly taken with hoarseness, which became worse by evening, with some stridulous respiration. Still worse on following morning, but quite well again in the evening. Worse again on morning of the 10th, and in the evening of same day I first saw the child. Cry and cough devoid of all sound. Had a suffocative attack in my presence, and I thought I could hear a loose membrane flapping in the larynx. Dyspnœa not very severe in intervals between these attacks. Retraction of lower ribs and xyphoid cartilage very slight. White membrane on posterior wall of pharynx. Little, if any, glandular enlargement. Cannot nurse well. Prescribed pilocarpin mur. gr. $\frac{1}{48}$ q. h., with tr. ferri mur., and an initial dose of gr. v calomel. Spray of ext. pancreatis was kept up continually, and child slept well, breathing almost noiselessly until, at 5 A.M., the suction-tube of atomizer became stopped, and by 10, at my visit, the child was again in about the same condition in which I had left it the night before. In the meantime it had nursed without apparent difficulty. I cleansed the tube, but after I left it soon became clogged again, and at 5 P.M. dyspnœa was extreme, with deep recession of xyphoid cartilage, cyanosis, apathy, child lying with its head strongly extended, as in opisthotomos. Respiration 48, pulse very frequent and feeble. The medicine had been given in only one-third of the intended doses. The child's mouth was now held open with a spoon, and the spray used continually by myself for an hour, at the end of which time respiration seemed much moister. Tracheotomy not allowed. The parents kept up the spray until 8:30 P.M., when the child died quite easily, apparently of asthenia, twenty four hours after the beginning of treatment.

Case 16.—Fannie T., æt. 6 years, began to have sore throat on morning of December 5, 1885, a severe snow storm having occurred on previous evening. Better on 6th. Went to school on 7th. Very slight hoarseness on evening of the 8th. When I first saw patient on 9th, at 10 A.M., there was complete aphonia, breathing was beginning to be stridulous, and there was some inspiratory recession of free border of ribs. Pulse 120. Small spot of diphtheritic deposit on left tonsil. Ordered salt pork to be tied around throat, and gr. $\frac{1}{24}$ pilocarpin mur. to be given every hour, after an initial dose of grs. x calomel. The pancreatic spray was used so diligently that by 7 P.M. 2¼ quarts of the solution had been atomized. Respirations were then 28, pulse 132. Considerable perspiration, ptyalism, and some vomiting. Had eaten some potatoes and squash for supper. Almost incessant cough, for which gave gr. ⅙ pulv. opii. By 8:30 P.M. pultaceous deposit had spread over whole of left tonsil. Pulse 160, respiration 40. Discontinued pilocarpin. Calomel has operated several times. Thought I heard a creaking inspiratory râle, which to me indicated extension of the disease into the bronchi. Little cough; sleeps by snatches.

Dr. J. H. Lewis was called in consultation. Calomel gr. ¼ q. h. Brandy ℥ j, and quinia sulph. gr. ij q. 2 h. Inunctions of oleate of mercury over larynx q. 2 h. Room to be filled with steam by immersing red-hot flat-irons in vessels of water. Spray to be used for a minute every fifteen to thirty minutes, patient breathing through mouth. Tracheotomy not allowed. Was called at 1:10 A.M. and found patient asphyxiated, unconscious. Died quietly in a few minutes, fifteen hours after beginning of treatment, and five days after first symptom of sore throat.

Having given a sketch of the cases treated, and recognizing the imperfections of which I was guilty in their observation, I would like to urge physicians to give the digestive ferments a fair trial in conjunction with such other treatment as the individual cases may demand. If it would seem impossible for the extract of pancreas or trypsin to have any solvent action in the small quantities inhaled in this way, how much more inert must be the lime-water spray used in the same manner, and if the former be not more active than the latter, it has at least the virtue of being equally harmless. Should any one, stimulated by this report, devise a readier means of bringing the digestive fluid in contact with the false membrane, making the method applicable also to fulminant cases, and doing away with the reckless and dangerous doses of mercury now in vogue, the object of this paper will be accomplished.

Dubuque, Iowa, January, 1886.

LUPUS VULGARIS.

Read before the Chicago Society of Ophthalmology and Otology, on December 14, 1886.

BY LYMAN WARE, M.D.,

MEMBER ILLINOIS STATE MEDICAL SOCIETY AND CHICAGO MEDICAL SOCIETY; SURGEON TO THE ILLINOIS EYE AND EAR INFIRMARY; OCULIST AND AURIST TO THE ORPHAN ASYLUM.

History.—Lupus vulgaris is no new disease, but on account of its frequent occurrence and, until the past few years, its almost incurability, I beg to call the attention of the faculty to a few cases which have come under my observation. Before referring to the history of these cases or submitting to your examina-

tion two or three patients who have kindly consented to appear before you, I would, in a few words, recall to your minds some notable features of this disease:

There is no doubt that the disease was generally recognized at least 500 years since, and designated "lupus." That in many cases it may have been confounded with carcinoma, by ancient writers, is highly probable. Willan was the first to apply the term lupus exclusively to certain forms of ulceration about the face. Bateman made no actual distinction between the effects and course of carcinoma and lupus, except that he considered the latter cured by arsenic, the former not.

Symptomatology.—Lupus varies much in appearance, according to the age of the patient, constitution, state of health, kind of diet, and the part affected. At first it appears in the form of tubercles, either isolated or in groups, which may be deeply imbedded in the true skin, beneath it, or quite superficial, and always spreads by infecting the adjacent skin. It is never congenital, though it may appear early in life. Unchecked by treatment it increases more or less steadily for many years. At times the disease may appear checked for years, when it will again break out with renewed vigor. In old age the severity of the disease is often diminished. Lupoid tubercle may terminate either in involution, leaving the skin atrophied and glistening like a scar, or in disintegration and ulceration.

It may occur anywhere upon the body, although most frequently, by far, upon the face. The cases which have come under my observation have originated on the lower lid, extending gradually to the eye and nose. Lupus of the alæ nasi and the tip of the nose assumes the dissiminatic form. The tubercles are prominent, and coalescing, form large, irregular protuberances. Lupus on the lower lid produces, first, complete ectropion, in consequence of cicatricial contraction of the skin; then gradually extends to the palpebral conjunctiva, the ocular and deeper tissues of the eye, involving at last the entire orbit. As the disease involves the conjunctiva it imparts to it a dark, reddish-brown color, and is decidedly trachomatous in appearance; later it becomes smooth, glistening and atrophied.

Etiology.—Many theories have been advanced respecting the cause of lupus. Both ancient and modern writers refer it to scrofula or syphilis. Although the terms scrofula and scrofulous have been used for ages by physicians as well as by laymen throughout the entire world, it must be confessed we have no very clear idea as to what scrofula is, or to what exact condition scrofulosis should be applied. In my younger days I was taught that scrofula, being a literal translation of the Latin *scrofa*, swine, was a disease common to those who eat pork. I have since thought that such an explanation was unfounded, and that the term "scrofula" originated in the fact that the submaxillary furrow, which does not exist in well-fed swine, was obliterated by glandular enlargements. Some who hesitate to use the word scrofula, designate exactly the same condition by the term "struma," or "strumous diathesis."

Although we may not be able clearly to define the term "scrofula," or "struma," yet in a case of indolent swelling of the lymphatic glands, large lips, flabby, soft muscles, with a feeble constitution, and where the slightest irritation produced chronic inflammation, followed by suppuration, we would not hesitate to designate such a condition as scrofulous, or strumous. In most of the cases that have come under my observation such a condition was not present, nor was there any history of syphilis. Some writers, while not considering lupus a syphilitic disease, think that it shows a syphilitic taint, yet I was not able to discover a single symptom that pointed toward hereditary syphilis. The patients generally were in excellent health, appetite and digestion good. The more I compare the two conditions the less resemblance I find. Lupus is an exceedingly chronic, indolent disease, arising from small tubercles imbedded in the substance of the skin, does not become rapidly worse, may persist for years without producing constitutional disturbance, and is wholly unaffected by anti-syphilitic treatment. It is also essentially a disease of early life, seldom making its appearance before the third year and hardly ever after the twentieth or twenty-fifth. When it appears later, it will generally be found to be a recurrence and not a primary attack.

The treatment of lupus rather indicates that it may be allied to the malignant diseases, a connecting link, as it were, between the non-malignant and the malignant.

Volkmann has recently laid great stress upon the fact that every portion of the diseased tissue should be most thoroughly eradicated by the scoop, and the same thing has been taught and attempted for many years by means of the knife, the caustic, or the galvano-cautery. It has long been insisted upon that whatever method be adopted it must be thoroughly and unflinchingly carried out, and repeated, if necessary, from time to time, according to the exigencies of the case, or its tendency to relapse. Most authors have considered it necessary to treat the disease locally, some by constitutional remedies only.

In the cases reported I have tried each method separately, then unitedly, and have no hesitancy in saying that when the local treatment was combined with proper internal medication, the advance toward recovery was much more rapid and satisfactory than when only one method was followed. The internal treatment consisted principally of tonics, as quinia, iron, strychnia, phosphates, and particularly arsenic, either in the form of arsenious acid or Fowler's solution, and special attention to a plain, nutritious diet, and out-door life. The local treatment consisted in the complete destruction of the existing lupoid tubercles, in whatever state of development, by means, first, of the scoop, or Volkmann's curette; then by a thorough and prolonged application of pyrogallic acid in crystals.

In some cases, after removing the superficial layer, consisting of morbid products, scales, secretions, etc., a pledget of absorbent cotton was saturated in a four per cent. solution of cocaine and firmly held on the diseased tissue. In other cases, where the lupoid tubercles were deeply imbedded or where the disease

was at all extensive, general anæsthesia was first induced. The patients never complained so much of the acid application as of the curetting or scooping out of the lupoid mass. The pyrogallic acid uniting with the blood and lupoid tubercles, produces a thick, brownish, syrupy substance, and as long as this is produced the acid should be applied.

Jarisch, of Vienna, was the first to call the attention of the medical profession to the local use of pyrogallic acid, though it had long been used in the arts, particularly in photography. Dr. A. Vesey (*Dublin Journal Med. Science*, 1878), observing its remarkable astringent effects on the hands of those engaged in photography, was led to employ it in internal hæmorrhage, and especially in the hæmophysis of phthisis, in which he found it very efficient in grain doses frequently repeated (every hour or oftener.)

Jarisch first used it in the form of a ten per cent. ointment, with vaseline. Besnier, of Paris, makes use of a saturated solution of the acid in ether, applies it with a camel-hair pencil to the diseased portion, and at once covers this with a layer of traumaticine. These applications are repeated until the disease is thoroughly eradicated.

Schrummer, of Buda Pesth, after destroying the lupoid tubercles by means of the ten per cent. ointment already mentioned, prevents a return of tubercles in the cicatrix, which is of frequent occurrence, by the application of mercurial plaster.

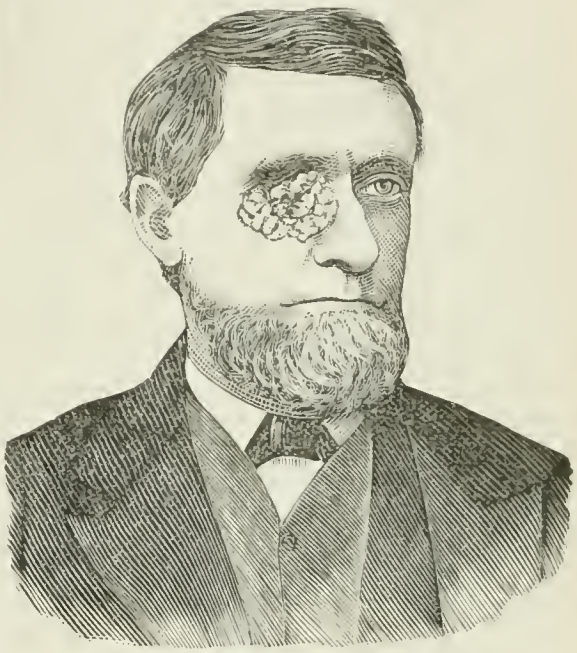
In some few cases in which pyrogallic acid has been used extensively and long-continued, poisoning has resulted; but when its use is restricted to the removal either of lupus or epithelioma, it is not at all likely to be complicated by any such unpleasant result. In cases of poisoning the kidneys are first affected, prostration and febrile disturbances appear, the urine becomes brownish or olive-green in consequence of hæmoglobinuria, the skin tinged with green, and a glairy mucus is vomited.

Dr. Charles W. Allen, of New York, has reported a number of cases of lupus treated by pyrogallic acid, and has expressed himself as most pleased with its effect. He made use of both the powder and ointment of varying strength, made with vaseline. He considers the acid of great value because it specially attacks the lupoid tubercles, induces destructive ulceration in and about them, leaving the healthy tissue unchanged.

In any preparation of pyrogallic acid care must be exercised not to combine it with an alkali, which would neutralize it; nor with a metal, which it would reduce.

Six cases have been treated, but in Case 1 iodoform in powder was used instead of pyrogallic acid.

Case 1.—Jas. M., æt 45 years. Was first attacked twenty years since while in the U. S. Army. The disease made its appearance at the inner canthus of R. eye. He attributed it to an injury received while riding under a tree and being hit by an overhanging limb. The disease gradually extended to the under lid, involved a portion of the upper, encroached upon the cheek, and finally the deeper tissues of the eye itself. The patient was given ether and the diseased mass thoroughly removed by means of the curette, and the wound dressed with powdered iodoform. Two weeks subsequently, a few lupoid tubercles again made their appearance at the inner canthus, but were easily removed by the curette without anæsthesia. The patient made a rapid recovery, and remained under observation about six months, and no relapse occurred. He assured me on leaving, that should there be a return of the disease he would surely let me know. He was placed from the first upon Fowler's solution of arsenic and advised to continue its use for at least six months.



The cuts shown give a good idea of the appearance of the case before and after treatment.

Case 2.—F. W., æt. 50., stone cutter; residence 441 Desplaines St., Chicago. Twenty years since a small tubercle about the size of a pea made its appearance upon the left ala nasi. It slowly increased until it attained the size of a large bean, ulcerating and extending at its edges. A few years later lupoid tubercles appeared at the inner canthus of the L. eye, and gradually extended to the lower lid.

Mr. W. had submitted to a great variety of treatment, which had only partially kept the disease in check. When he came under observation the protuberance on the ala nasi was, at least, the size of a large lima bean, dark-red and ulcerated at the edges. The ulceration at the inner canthus occupied an irregular space, about the size of a ten cent piece. Although there was at least an inch of perfectly healthy skin and tissue intervening between the two, the patient was confident that there was some connection between them. When the ulcer of the nose was red and painful that of the eye was also worse. As the patient had considerable fortitude the lupoid tubercles of both nose and eye were thoroughly curetted without the aid of ether, and the pyrogallic acid applied until the brownish syrupy substance ceased to form.

The history of this case differed somewhat from the others, in this respect, that for years there had been more or less pain. In fact, of late, the pain had been so great that it was impossible for him to work at his trade or sleep, sometimes for several nights in succession. The operation relieved him completely of the pain and he was able to sleep, and returned at once to his work. Several operations have been necessary, but he has been able to sleep regularly and work constantly, and at the present time he appears to be completely cured.

Case 3.—Minnie —, æt. 16. The lupoid ulceration first began when she was 12 years of age, unaccompanied by any pain. When she first came under treatment, the entire upper and lower lids and about one-third of the adjacent cheek were involved. Ether was administered, the entire ulcerated surface was curetted and the acid applied.

This case being at the Illinois Charitable Eye and Ear Infirmary, and my term of service about expiring, came under the charge of my colleague, Dr. Gardner, who continued the same course of treatment. After remaining a month or two in the institution, and no indication of the disease reappearing she was allowed to return to her home. Six months have now elapsed and there has been no return of the disease, but as there is slight ectropion of the lower lid, in consequence of the deep ulceration, a plastic operation will be necessary to restore it to its normal condition.

In all cases of lupus about the eye, I have considered it prudent to protect the cornea from the action of the acid, by means of a thick layer of absorbent cotton.

I have now used the pyrogallic acid in five cases, and in three or four very extensively and freely, yet in no case have I seen any symptoms which would indicate poisoning.

MEDICAL PROGRESS.

SEROUS CYSTS OF THE ORBIT.—At the meeting of the Académie de Médecine on December 14, M. PANAS read a communication on "The Pathogenesis of so-called Serous Cysts of the Orbit." The greatest obscurity has hitherto attached to the nature and pathological signification of these cysts. After a careful consideration of the subject M. Panas draws the following conclusions:

1. These cysts, without exception, are of congenital origin, even when their presence is not manifested until an advanced age.

2. They present seats of election, corresponding with the bronchial clefts of the embryo.

3. Their contents (epithelium, hairs, teeth, solid or liquid fat) may vary without the dermoid origin being doubtful, and this is due to the histological constitution of their walls.

M. Panas gives the record of an interesting case, with a full histological account of the cyst.—*Bulletin de l'Académie de Médecine*, No. 50, 1886.

DOUBLE PNEUMONIA TREATED WITH PILOCARPINE.—A man æt. 18, who had been greatly broken down with dysentery complicated with nephritis, suddenly acquired a double pneumonia. Antipyretics, expectorants, etc., resulted simply in a fresh lighting up of the dysentery. As in this way the organs of secretion as well as those that regenerate the blood became unfit for their work, uræmia and asphyxia combined threatened to set in, and to combat at least one of these dangers, recourse was had daily to hypodermatic injections to 0.1 gm. of pilocarpine. Thanks to the profuse perspirations and the salivation, purification of the blood was in this wise obtained until the lungs were again able to do their work. Improvement became more pronounced after every injection, and patient recovered in a very short time. With like good effect this drug was used in the case of an old lady sick with broncho-pneumonia, with intense dyspnœa.—*Memorabilien*, Hft. 4, 1886.

TREATMENT OF WHOOPING-COUGH.—The following method of disinfection of sleeping and dwelling apartments and clothes is recommended by M. MOHN in the treatment of whooping cough. It is said to cure the cases immediately. The children are washed and clothed in clean articles of dress and removed to another part of the town. The bedroom and sitting-room or nursery are then hermetically sealed; all the bedding, playthings, and other articles that cannot be washed are exposed freely in the room, in which sulphur is burnt in the proportion of 25 grammes to the cubic metre of space. The room remains thus charged with sulphurous acid for five hours, and is then freely ventilated. The children return the same day, and may sleep and play in the disinfected rooms.—*Lancet*, Dec. 18, 1886.

STERILITY FROM TEA-DRINKING.—DR. DAVIS (*Therap. Gaz.*) states that tea-drinking acts in the direction of producing sterility in females.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, FEBRUARY 12, 1887.

PROGRESS OF MEDICINE AND VOLUNTARY MEDICAL ORGANIZATION UNDER A FREE GOVERNMENT.

The brief message of President Cleveland recently calling the attention of Congress to the propriety of making preparations for properly celebrating the completion of the first century of our country's progress under our present written Constitution establishing a true representative form of government, both State and National, suggested the question, What progress has medicine and medical organizations made under such form of government during the same period?

The written Constitution of the United States by which the previously existing thirteen loosely confederated States became one Nation, was passed by a Congress or Convention of delegates chosen for that purpose by the several States, and was officially promulgated on the 28th day of September, 1787. Consequently the 28th of September, 1887, will mark the completion of the first century of National progress under a well-defined constitutional form of government, adopted by the unrestricted choice of the people, and administered in all its departments by representatives chosen either directly or indirectly by the same people. Measures will undoubtedly be instituted for appropriately celebrating so important an anniversary day in our country's history; and if so it must provide for a careful and impartial review of our progress, not only in population, commerce, wealth, and political freedom, but equally so in education in its broadest sense, popular, scientific, and professional. It is perhaps the first time in the history of the human race, that an experiment on so grand a scale, unbroken for a century, has been allowed for determining how far a people holding not only all political power in their own hands, but equally the shaping and maintenance of all educational institutions, from the grammar school to the University with its departments of science, art, law, medicine and theology. In no department would such a review be more intensely interesting and profitable than that of medicine. Commencing the century in 1787 with but one organized medical college in actual operation in the entire country, and that one patronized by much less than one hundred students and granting less than a dozen diplomas annually; with State Medical Societies existing only in New Jersey and Massachusetts, and not a single medical periodical issued from the printing press of the country, and ending in 1887 with more than 100 organized medical colleges, educating more than 10,000 students and granting 3,000 or 4,000 medical diplomas annually; with active State Medical Societies in every State and inhabited Territory, all represented in one National Association, constituting a Republic of Medicine; while one hundred medical periodicals, weekly, monthly, quarterly and annual, are regularly issuing from the printing presses in all parts of the country, what a field for philosophical study is afforded by such a professional development, in comparison with all other elements of progress, all resting on the voluntary support of a free people.

It has been suggested that the attention of all the County and State Societies should be directed to a careful collection of all items of educational, scientific, sanitary and practical interest in their respective counties and States, and have it in readiness for such demonstration of the real progress of medicine during a century almost untrammeled by legislation, and equally unsupported by Government appropriations. The fact that the Ninth International Medical Congress is to be held in Washington, during the same month that marks the centennial of our constitutional government, gives much additional interest to the medical review we have suggested.

THE VEGETABLE ASTRINGENTS.

A valuable contribution to our knowledge of the vegetable astringents is a report to the Scientific Grant's Committee of the British Medical Association, by DR. RALPH STOCKMAN, of Edinburgh, on "The Action and Therapeutic Value of Vegetable Astringents." Dr. Stockman's investigation was undertaken with the purpose of determining the action of the vegetable astringents, after absorption into the blood, and of ascertaining to what extent

the current ideas as regards their therapeutic value are supported by experimental research. Dr. Stockman's paper may be found in the *British Medical Journal* of December 4, 1886. Briefly, the term "astringents," including "styptics," may be defined as "substances," which, either when locally applied, or after absorption into the blood, cause contraction of tissues, diminished secretion, and arrest hæmorrhage;" and those which act in this manner after absorption into the blood are known as "remote astringents." All the vegetable astringents which now have a reputation as remedial agents owe their value to tannic acid, but the chemical composition of this acid is not identical in all of them, the variety of tannic acid present being designated by such terms as "kinotannic," "catechutannic," etc. But all have the common property of precipitating albumen and gelatin from watery solutions, of producing an "astringent taste in the mouth, and of giving green or blue color reactions with persalts of iron.' The different varieties, however, have different powers of precipitating albumen. Gallic acid, which may be more properly classed as a remote astringent, does not precipitate albumen or gelatin, and does not tan; and its astringent taste is but barely perceptible Pyrogallic acid, while it precipitates albumen, differs markedly in other respects from tannin. In making his investigations Dr. Stockman selected, as representative members of the vegetable astringents, gallotannic, catechutannic, rhatany-tannic, gallic and pyrogallic acids, using the pure material, or as nearly pure as it could be obtained, first giving attention to the form and amount in which these bodies are absorbed, in which they circulate in the blood, and are excreted, and then to their action on the blood-vessels and circulation.

The experiments on absorption and excretion were made with gallotannic (ordinary tannic) and gallic acids. When tannic acid, says the writer, is taken into the stomach, it unites with the alkalies and the albumen present, and both these, and in the intestines, becomes converted, wholly or partially, according to the dose and time allowed, into gallic acid—as was shown by Schroff in 1853. "Absorption into the blood may take place as tannate and gallate of alkalies, or possibly as tannate of albumen dissolved in the alkaline intestinal secretion." Cavarra, Mitscherlich and Hennig, who investigated this subject over thirty years ago, found only a trace of these substances in the blood; and it is probable that their failure may have been due to crude processes of analysis. Dr. Stockman made ten experiments on rabbits to ascertain the form and amount in which tannic, or its derivatives, circulate in the blood. Tannic acid, in doses varying from one to ten grammes, dissolved in water, was given by the mouth, and the rabbits killed by bleeding at various periods after the administration of the drug; but not until it was ascertained by examination of the expressed urine that the addition of ferric chloride gave a copious blue precipitate. In no case did the blood or serum show the faintest blue coloration when ferric chloride solution was mixed with it on a white porcelain slab. The ordinary method of examining serous fluids was followed in the analysis of the blood. "The freshly defibrinated blood was precipitated with alcohol, filtered, and the residue washed with hot alcohol-ether and water." The filtrate and washings contained only the merest trace of a substance striking a greenish color with persalts of iron. Various other methods were tried, and with no better success; and it therefore seems evident that tannic and gallic acids are absorbed slowly and in small amounts from the intestines, and are so rapidly excreted from the blood that only a very small quantity is present in the circulation at any one time; and the experiments also show that tannic and gallic acids are excreted chiefly by the bowels, to a small extent by the kidneys, and by no other channel. Careful examinations of the various organs and secretions showed that only the urine, genito-urinary apparatus and the alimentary canal gave any reactions at all.

The only remaining method left by which to determine the forms in which tannic acid is absorbed, was by examination of the urine. Dr. Stockman confirms Lewin's observation that the amount of tannic acid excreted in the urine of rabbits is always considerable. Gallic acid is also invariably found, both being in combination with alkalies. The details of his method of analysis may be interesting. "The urine was distilled to a scrapy consistence either *in vacuo*, at a temperature of 110° to 120° F., or in a carbonic acid atmosphere. The residue was shaken up with alcohol, the whole filtered, the filtrate evaporated to dryness, and extracted with acetic ether. The acetic ether was then drawn off at a gentle temperature, and the residue (which must be quite free from water) washed several times with hot benzole. The washing with benzole was for the purpose of removing any pyrogallic acid which might be present, tannic and gallic acids being quite insoluble in it. The gallic acid was then removed by washing with anhydrous pure ether, in which tannic acid is insoluble. The residue left is dark-brown in color, syrupy in consistence, and contains the tannin

mixed with various impurities. When dissolved in water, if tannin be present, it precipitates albumen and gelatin (the alkali-tannate being decomposed by the acetic ether), the precipitate being soluble in lactic acid and alkaline carbonates. It also gives a copious blue-black precipitate with ferric salts, not clearing up on boiling." This method has the advantage that it is carried out at a low temperature, and oxidation is thus in a great measure prevented. From experiments on dogs it was found that when pure uncombined tannic acid was given there was generally found in the urine only gallic acid, with sometimes a varying, but always small, quantity of tannic acid. Whatever pyrogallic acid may be present cannot be detected by ordinary test for it. But if tannate of soda be given a large quantity of tannic acid will be found in the urine, along with a smaller quantity of gallic acid, pyrogallic being also absent in this case. Dr. Stockman's explanation of this is as follows: When uncombined tannin reaches the stomach (the contents of which are acid), it combines with the albuminous matters present to form tannate of albumen, only a minimal quantity combining with alkalies to form alkali-tannate. In the alkaline intestine, only such of it as has escaped combination with albumen is free to form alkali-tannates. The tannate of albumen thus formed is absorbed from the intestine with difficulty or not at all, and hence, remains there a comparatively long time, thus affording ample opportunities for the conversion of the tannic into gallic acid, in which latter form it is absorbed; the greater part being, however, excreted by the bowel. When, on the contrary, tannate of soda reaches the stomach, the chemical affinities of the tannic acid are already satisfied, and it is rapidly absorbed into the blood, thereby affording much less time for its sojourn in the intestine, and its conversion into gallic acid. Hence the large amount of tannic acid and the relatively smaller amount of gallic acid in the urine. The observations on man were conducted in a similar manner, and gave exactly similar results. Tannic acid may be given to man in considerable quantities and for a long time, without obtaining any bluish coloration on the addition of ferric salts to the urine. The fact that pyrogallic acid was not obtained in any case seems to show that it is not formed in the body.

Experiments with gallic acid showed that it has a dilating action on the blood-vessels; and that it has the power of dilating them again after they have been made to contract by the circulation of a weak alkaline solution through the frog. As alkalies contract vessels and gallic acid dilates them, we would naturally suppose that neutral gallate of soda would have no effect on their calibre; and a large number of experiments showed this to be the case. The circulation of salt solution containing gallic acid through mammalian blood-vessels also causes them to dilate. But when gallic acid is added to blood it becomes neutralized, and if the blood be circulated through an organ, either slight dilatation or no effect at all is produced on the calibre of the vessels. In the experiments the dilatation was in all cases so slight that it might be attributed either to accident, or, more probably, to the addition of the gallic acid diminishing the alkalinity of the blood. Though it has been generally assumed that tannic acid contracts blood-vessels, the experiments made by Dr. Stockman show that dilute solutions act exactly like dilute acids, and cause vascular dilatation. Solutions of catechutannic and rhatany-tannic acids, made with saline of the strength of 1:7500 to 1:1500, caused distinct dilatation. With such solutions it is sometimes possible to recover vessels which have been contracted by the circulation through them of alkaline solutions. From the fact that gallotannic acid is insoluble in sodium chloride solution it is difficult to investigate its action; for when it is added to the saline it is immediately precipitated, and in the circulation solid particles come in contact with the vessel-walls, thus causing contraction at once by coagulating the albumen. Still, in spite of the difficulties attending the experiments with it, it is proper to draw the conclusion that its action is similar to that of other varieties of tannin; and experiments on the excised sheep's kidney show that when the chemical affinities of tannin are satisfied it has no action on the vessels. Dr. Stockman's experiments with hypodermatic injections of tannic acid showed that it does not produce the effect stated by Fikentscher—that hypodermatic injections cause contraction of the arteries from stimulation of the vaso-motor centre in the medulla.

What, then, is to be said of the therapeutic value of vegetable astringents? In regard to gallic acid; it has no other action than that of a weak inorganic acid, either locally or when absorbed, and cannot be said to have any special action as an astringent. It does not lessen the calibre of vessels, either by peripheral or central action; and the fact that it does not precipitate albumen when used locally shows that it has no influence on catarrhal inflammation. It does diminish the alkalinity of the blood, and thus increases its tendency to coagulate; but stronger acids act in the same way, and more powerfully. "As regards tannic acid, the matter is somewhat more

complicated. Locally applied, its action for good depends on its power of precipitating albumen, the layer of tannate of albumen which is formed acting as a protective to the underlying mucous membrane. To this action is due its value in catarrhal inflammations of the alimentary canal, and in discharging surfaces generally. Its usefulness is limited to such cases, and as a remote astringent it is valueless. In weak solution, and uncombined, its action on contractile tissues, such as the vascular walls, is simply that of a dilute acid, while it is only when stronger solutions are used (much stronger than can ever exist in the blood, even if it were not in combination there) that its power of precipitating albumen comes into play. When its chemical affinities have been satisfied it is no longer capable of precipitating albumen, and therefore exercises little or no influence on the parts with which it comes in contact." The very small quantity in which it can exist in the blood at any one time also precludes its having any marked remote action; and as it is excreted by the bowels and kidneys, it can scarcely exert any effect on other mucous membranes, as the bronchial. Finally, while it is conceivable that it may have some influence in albuminuria, this is to be regarded as very doubtful; and the reported cases in which it has been used and careful measurements and analyses made confirm this doubt.

W. C. WILE, M.D., Editor of the *New England Medical Monthly*, has been appointed to a Professorship in the Medico-Chirurgical College of Philadelphia, and makes his future address 1006 Walnut Street, in that city, from which he will continue to edit his journal, as heretofore. Dr. Wile is one of the most active and talented members of the New England profession, and the Medico-Chirurgical College, though the youngest of the regular medical schools of Philadelphia, is nevertheless organized on a full graded system of instruction, and manned by a Faculty as worthy of the confidence and patronage of the profession as are her older competitors.

THE INTERNATIONAL MEDICAL CONGRESS OF 1887 AND TRANSATLANTIC STEAMSHIP FARES.—On the last page of THE JOURNAL of February 5 we gave a card from the Chairman of the Committee of Arrangements, Dr. A. Y. P. Garnett, giving information concerning liberal arrangements with several of the steamship lines, and the following appropriate acknowledgment should have been appended to the card: "The Committee wish to express their thanks to Mr. Edward Droop, of Washington, for his active interest and efficient aid in consummating this arrangement."

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, January 12, 1887.

THE PRESIDENT, JOS. TABER JOHNSON, M.D., IN THE CHAIR.

H. M. CUTTS, M.D., Secretary.

DR. D. S. LAMB presented

A PORTION OF THE ILEUM, WITH PERFORATION, FROM A CASE OF TYPHOID FEVER.

This specimen consists of a portion of ileum removed about 1½ feet from ileo-colic valve. It contains several Peyer's patches, all of which show slight thickening. The lowermost one is thickened, ulcerated and perforated. The ulcer is irregular in outline, edges slightly undermined; the base shows muscular fibres. The perforation is one-eighth inch in diameter; peritoneal surface of specimen plastered with pseudo-membrane. The case is one of typhoid, or perhaps more properly *enteric*, fever. The patient was a white man, age 29; had been perfectly healthy until this sickness. After several days malaise, typhoid fever was diagnosticated. He died ten days afterwards. The disease appeared in all to last two weeks. Temperature, taken twice daily, ranged from 102° to 104°. Symptoms of perforation occurred the day before death. The attending physician, for whom I made the necropsy, was unable to arrive at the cause of the disease. The post-mortem examination showed the body well nourished, lungs and heart normal. There was dirty, malodorous liquid in abdomen; some flatulent distension of stomach and intestines; intestinal peritoneum reddened, and in right iliac region plastered with dirty looking lymph. In lower two feet of ileum some Peyer's patches were nearly normal, others thickened and irregularly ulcerated; and one of them ulcerated and perforated, as described. Small ulcers in cæcum and vermiform appendix; liver normal; gall bladder ulcerated and contained over eighty gall-stones with facettes; spleen large and soft; kidneys normal.

According to Murchison, quoted by Fagge, peritonitis occurs in three per cent. of all cases of typhoid fever, and in nearly twenty per cent. of all deaths from the fever. The cause of the peritonitis is usually, as in this case, a perforation of the ulcerated Peyer's patch and escape of the intestinal contents into the peritoneal cavity. The perforation is most often excited probably by a sudden movement of the patient, as vomiting, straining, rising up; or by flatulent distension of the bowel, enemas, etc. The indication is, of course, to prevent so grave an occurrence by insuring the utmost quietude to the patient. And since perforation occurs sometimes in cases called mild, the patient perhaps walking about, the necessity of absolute rest is the more emphatic. In this particular case the date of perforation is placed at the end of the second week, which is several days earlier than that usually assigned. When,

however, it is considered how difficult it is to ascertain the precise date of beginning of the disease, the actual date of perforation becomes doubtful. The fact that many Peyer's patches in the lower ileum were but little thickened, while scattered among these were others ulcerated and one perforated, seems to confirm the theory that usually all the patches are not involved at one time, but with some hours or days of interval between. The fever, depression and danger are doubtless greater when all the patches are involved at the same time. But few cases recover after perforation in typhoid fever. It is quite likely that laparotomy has been tried in some cases, but I have not looked this up, and from what we know of the disease I should not expect healing to take place. I regret that the attending physician has not found it convenient to furnish a history of the case.

Dr. S. C. Busey remarked that as Dr. Lamb had brought up the question of laparotomy in perforation of typhoid fever, he would like to hear the subject discussed. Neither Dr. Lamb nor himself could recall an operation with this in view. As he understood Dr. Lamb, he said that the physician attending the case could not make out the cause of the fever. There is no question but that there is a specific cause for typhoid fever. Usually we get it in drinking water, food, etc. While it is easy to diagnosticate typhoid, it is not always so easy to tell when perforation has taken place. The peritonitis, which is sometimes present in typhoid, cannot always be ascribed to perforation. He has seen cases complicated with peritonitis get well, but he was sure that there was no perforation, because such cases usually die. Cases of recovery after perforation have been reported, but the diagnosis was only presumptive.

In his opinion, if the diagnosis is certain, laparotomy is justifiable, as the only hope of saving life. Of course, the diseased Peyer's patches and extravasation of fæces would complicate matters a great deal. He thought it difficult to make a diagnosis of perforation. He said that he used to think that all cases of peritonitis were from perforation, but now he believes that if they get well there has been no perforation.

Dr. J. Ford Thompson said that he had had no experience in laparotomies for perforation in typhoid. He thinks that while the operation may be justifiable, it would, probably, be unfavorable, not only on account of the local condition of the bowel, but on account of the general condition of the patient as well. He does not think that union of the gut would take place readily even if it were healthy. A better procedure would be to make an artificial anus, with the intention of operating again when the patient had somewhat recovered. He thinks the diagnosis of perforation easily made. The wound cannot be closed as a bullet wound, for if it was it would probably tear open in a few days and we would be worse than when we started. He thinks that the artificial anus will eventually be the legitimate operation.

Dr. H. D. Fry said that the specimen illustrated one reason why repair of perforation would be difficult. There was so much diseased tissue about the perforation, which it would be necessary to take away, that, as Dr. Cook has just suggested to him, cicatricial stricture would be likely to follow.

Dr. Lamb explained to Dr. Busey that the physician could not find the cause of this particular case of typhoid, not that the specific germ of the disease was not known.

Dr. R. Reyburn thinks that laparotomy for typhoid perforation has been done, but he cannot now recall where he has seen the report. He thinks the diagnosis of perforation easy, and that laparotomy would be justifiable.

Dr. Jos. Taber Johnson read a paper entitled

CAN THE CÆSAREAN SECTION SAFELY SUPPLANT CRANIOTOMY IN THE UNITED STATES AT THE PRESENT DAY?

(See page 169.)

Dr. A. F. A. King congratulated Dr. Johnson upon the masterly manner in which he handled the points of his argument, and upon the mode of presenting his figures. Two years ago, he said, he read a paper giving some conditions in which craniotomy would be absolutely necessary, and now, if after hearing them once, he had understood them correctly, he endorses Dr. Johnson's views and declares his belief that craniotomy will always prove a valuable operation.

Dr. J. Ford Thompson said that he had been following Dr. Johnson's paper very closely, and as near as he could make out the doctor recommended craniotomy in this country and Cæsarean section in Germany, where there are better operators. Dr. Johnson even expresses his personal preference for Cæsarean section, but advises us to do craniotomy. This cannot be the scientific way of looking at the question. One or the other is right, and the duty of the scientific surgeon is to find out the truth as to which is the better operation. There must be something better than the ghastly operation of craniotomy. There can be no doubt, however, but that in the hands of the ignorant more mothers will be saved by it than by Cæsarean section; but the ignorance of the operator is not the question to be considered. Other things being equal, which operation will save more lives, is what we must endeavor to find out.

If he had a good case and was called upon to decide on the operation, he would choose the Cæsarean section. He would not select the Sänger operation in all cases. Sänger's operation has a wonderful list of successes following it, but on the other hand he has seen C. Braun save three mothers and three children by the Porro. It is not so much the operation, as the time at which it is done. It is like the operation for strangulated hernia. The operator is hardly responsible for a fatal issue when the patient is brought to him after a prolonged taxis. If done in time the result would almost certainly have been successful. Thus, no one system can be implicitly followed out, and he would advise the Porro where the pelvis is so small that a future pregnancy would be likely to be fatal, and a Sänger where there was a possibility of a subsequent premature delivery.

Craniotomy may also be useful. If he found the patient very far gone and the fœtus dead, he would

advise craniotomy. In any case, if the mother alone is to be regarded, craniotomy is the safer operation; but if the child be alive, and we are to consider how most lives are to be saved, Cæsarean section is the operation.

Upon Dr. King's calling the speaker's attention to the fact that craniotomy is more fatal to the mother than Cæsarean section, when the pelvic diameters are below 1½ inches, Dr. Thompson said he supposed that that exception was understood.

DR. R. F. A. KING said he had long been in doubt as to whether the argument advanced by Dr. Barnes, viz.: that of considering the number of human lives that might arise from future pregnancies if the woman were saved, was a legitimate one. Should we admit this argument, on the one side, by saying that if the woman survive she might bear other children by induced premature delivery; so, on the other hand, it might be said that if she did *not* survive, her husband would then be at liberty to find a better breeder in another wife. Moreover, if the question of increasing population is to be admitted, we should also have to consider the future capacity of the child, or children, in this respect. But he thinks it is not a matter so much of *populational increase* as it is one mostly, or entirely, applying to the *individual* life of the lying-in woman and the *individual* child to be delivered. We deal with the existing emergency only, or at least chiefly: future children, yet unbegotten, must be left for the future.

DR. H. D. FRY said that he thought some explanation of Dr. Garrigues's position in regard to the Sänger operation was due to that gentleman. It did not seem to him that Dr. Garrigues, as implied in Dr. Johnson's paper, meant to claim for himself the origin of the so-called Sänger modfication. He raised the question whether an operation should be named after the one who proposes it or after the one who first performs it. Dr. Garrigues thought it might with equal justice be called after his name because, in a published list of the number of Sänger's operations performed, he occupied third place and Sänger eighth. His operation therefore antedated Sänger's. The method, moreover, differs as now practised from the original one suggested by Sänger. It has been found unnecessary to remove the wedge-shaped piece of uterine tissue. He said, further, he was not familiar with the histories of the five cases operated upon in this country after the Sänger modification, all of which, as Dr. Johnson states, terminated fatally. In the case operated upon by Garrigues, the patient had phthisis and was in the worst possible condition to stand any grave surgical operation. At the autopsy the peritoneal wound was found united and the uterine cavity entirely separated from that of the peritoneal. In this instance it is unfair to attribute the result of the operation to a failure of the Sänger modification.

Dr. King very properly makes a point of the degree of pelvic contraction existing in a given case when considering the advisability or not of craniotomy. The statistics of the operation in this country show a mortality of 40 per cent. in the higher degrees of contraction. Consequently our surgeons make as bad a showing, compared with Continental operators, in craniotomy as they do in Cæsarean section. In Europe craniotomy gives a mortality of only 8 per cent. or 5 per cent, and some operators have had a series of cases without a single death. There are three principal causes, Dr. Fry thinks, why our success in this line is not so good as that of our foreign brothers viz.: They follow antiseptic precautions more rigidly; they have had greater experience with the improved modifications of Cæsarean section; and they possess a better knowledge of pelvimetry—and, Dr. King added, more cases of pelvic deformity. Two of these disadvantages, the doctor continued, the surgeons of this country should overcome; the third is more difficult to remove, because the facilities for obtaining equal knowledge in pelvimetry do not exist in our country.

The importance of being able to ascertain the degree and nature of the pelvic deformity is indicated thus:

Suppose, in a case of dystocia, the antero-posterior diameter of the brim is ascertained to be three inches. With this amount of contraction of the conjugata and with no knowledge of the transverse and oblique diameters, efforts may be made to deliver by version, symphysiotomy or craniotomy. If the case, however, should be one of justeminor or equally faulty pelvis and a decrease of one inch in all the diameters, the early performance of Cæsarean section would offer the best chances for the mother, and efforts at delivery in other ways would jeopardize the result.

The great value of enforcing antiseptic precautions is shown by the fact that before the introduction of this method, Cæsarean section was uniformly fatal when performed by skilful operators connected with maternity hospitals. Now, they obtain brilliant results by the use of antiseptics. The German operators take the most minute precautions to avoid infection. Let the surgeons of this country advance in this respect. They can do that and they can operate skilfully, and adopt all the improved modifications of performing Cæsarean section.

DR. S. C. BUSEY said that he would like to congratulate Drs. King and Johnson on the reformation of their opinions. Two years ago, when he had advocated entirely abolishing craniotomy, these gentlemen had opposed his ideas.

(DR. KING explained that he had not altered his views. He had opposed the complete doing away with craniotomy, which Dr. Busey had advocated, and had himself shown conditions in which it would be absolutely necessary.) Dr. Busey replied, that at all events he had made some progress, as he had just indorsed Dr. Johnson's paper.

DR. BUSEY, continuing, said that he congratulated himself not a little that the views expressed by him two years ago were coming to be held by the profession at large. If he recalls Dr. Johnson's paper rightly, the chief reason why craniotomy should still be practised is that it is an easier operation than Cæsarean section—that there are still so many men illtaught that it cannot be entirely done away with. This cannot be, as Dr. Johnson says, the scientific standpoint from which to look at the question.

The doctor quotes from a table of Sänger operations prepared by Dr. Harris (*Med. News*, September 18, 1886), in which 38 cases are reported. Of the 76 lives involved 59 had been saved. He compared these with 38 cases of craniotomy, where at the outset it is only possible to save the 38 mothers, and called attention to Dr. King's remark that in the high grades of contracted pelves craniotomy was more fatal to the mother than Cæsarean section, thus making the outlook of saving even the 38 mothers a bad one.

Dr. King remarked that he did not think that a good basis of comparison.

Dr. Busey replied that the two operations were always to be compared. Each was the alternative of the other, and no woman was to be delivered by craniotomy or Cæsarean section who could be delivered by forceps, version or symphysiotomy.

Dr. Johnson thought that 38 cases of Sänger's operation was rather more than had been done, and put in evidence an autograph letter from Dr. Harris giving the synopsis of only 26 cases collected by the writer, and he further reminded Dr. Busey that his paper dealt only with the Cæsarean section in the United States.

Dr. Busey replied that the discussion of such a question should not be limited by any boundaries. Even if we confine ourselves to the United States, Dr. Johnson has wrongly undertaken to lay down a law by previous unlucky experiences, and to assert that the results will continue bad, in the face of the fact that surgery has made the most astonishing advances in the past few years, and is capable of advancing still further. By limiting the discussion to one locality he is discouraging the surgeons of that locality from making advances, and just so long as craniotomy is taught, it will be practised, because there will be men too ignorant to do Cæsarean section. The more craniotomies there are done, the more there will be done. He agreed with Dr. Meadows that it will have to be discussed from a moral as well as from a scientific standpoint, for just so long as teachers teach to kill at will the killing will be done.

Dr. King remarked that the killing could hardly be said to be done at will.

Dr. Busey replied that it was most assuredly done at will. The operator fully considered the mother before proceeding, and then voluntarily and at will killed the child.

Dr. Acker asked Dr. Busey how he would get around the objections of the friends and relatives to the Cæsarean section?

Dr. Busey replied that their objections did not relieve the doctor of his responsibilities—that because they will not permit the right thing to be done, it does not make it right to do a wrong act.

Michigan State Medical Society.—The executive committee have changed the date of the annual meeting of the Society to May 12 and 13, so as not to conflict with the meeting of the American Medical Association.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, December 17, 1886.

The President, Chas. Warrington Earle, M.D., in the Chair.

(*Continued from page 164.*)

ÆTIOLOGY, PATHOLOGY AND CLASSIFICATION OF SALPINGITIS.

The Secretary, Dr. Edward Warren Sawyer, read the following communication from Dr. Sänger, of Leipsic, in reply to a letter by Mr. Lawson Tait, read before the Society, May 28, 1886.

Dr. Sänger's letter was translated by Dr. Ivo Bernauer, of the Cook County Hospital, and revised by Dr. Christain Fenger.

Leipsic, Oct. 10, 1886, Lindenstrasse 16.

To Daniel T. Nelson, M.D., President of the Chicago Gynæcological Society.

Dear Sir: I have been personally attacked by Mr. Lawson Tait in a letter addressed to you; as I desire that my reply go by the same way, I take the liberty of requesting you to bring my letter to the notice of your Society and to have it assigned a place in the Transactions of the same. Nobody will dispute that up to the present time Mr. Lawson Tait, of all laparotomists, has had the best results, at all events in regard to ovariotomy and salpingo-oöphorectomy. His practical results have, however, raised his conceit to so high a degree that in pathological questions also he assumes a certain infallibility, which vents itself in numerous sallies and attacks upon others. The consequence of this is that just at present, Mr. Lawson Tait is being subjected to various energetic criticisms as by Bigelow, Schröder and others.

Now Mr. Lawson Tait has also shot one of his shafts at me. I feel very thankful toward Dr. Christain Fenger for having received it on my account. However I do not wish to allow the matter to rest there.

At the sesssions of the Gynæcological Society of Chicago, held in February and March, the treatment of pelvic abscess by laparotomy was discussed in a highly instructive manner. Dr. Fenger in his excellent and exhaustive remarks, said that "my statements regarding ætiology were the most complete" inasmuch as there must necessarily be as many forms of pelvic abscess as there are forms of disease of the Fallopian tubes. The latter were enumerated by Dr. Fenger, according to the classification given by me in a paper read at the *Versammlung Deutscher Naturforscher* in Magdeburg. (See report, Archiv. f. Gynæk. Bd. XXV, pp. 126–33.) In this classification six different forms are recognized, and it is this distinction which Lawson Tait is pleased to style "absurd." Although Dr. Fenger reiterated his statement "that he regarded my classification as correct and complete and in accordance with the laws governing inflammatory processes in all organs of the body," yet I do not think that this defense of my position is sufficient. Considering the great influ-

ence Lawson Tait exercises upon the profession, I deem it my duty to refute him in every particular. I shall attempt to do so in a scientific manner, and I may thus hope that my reply will prove of general use and interest.

The pathological anatomy and the course of salpingitis can be understood only when we bear in mind the theories of infection. The whole sexual tract, from the ring of the hymen to the *ostium tubæ abdominale*, is open to the entrance of the external air and the germs suspended in it. Carriers of infection coming from the abdominal cavity and its contained organs may also enter at the *ostium tubæ abdominale*. Even microbes originally lodged in the external parts, in the vagina around the cervix, may, by way of the lymphatics, reach the peritoneal cavity, and thence gain entrance into the tubes.

The normal vaginal and uterine secretions at the age of puberty and the menstrual blood contain numerous non-pathogenous micro organisms. Still greater numbers are found in the catarrhal secretions of the uterus in cases of endometritis as was demonstrated by Küstner. As to the normal tubal secretion and the tubal secretion in cases of *salpingitis catarrhalis*, consequent upon *endometritis catarrhalis*, no investigations have as yet been made to show whether or not they likewise, contain non-pathogenous microbes. However, as the secretion of an endometritis contains microbes we may assume that if the inflammation is continued into the tubes, its secretion will here likewise contain the same. It has been clearly proven that pathogenous micro-organisms pass from the external parts to the tubes, and the peritoneal cavity, a fact which is doubted by no one, perhaps, except by Lawson Tait. These organisms have, in part, been acurately studied, and it is well known that different kinds produce distinct forms of salpingitis, and secondarily pelveo-peritonitis. The fact was already established by Guréin and Guerrier, that in making vaginal and intra-uterine injections air, and thus, also micro-organisms, might pass into the tubes (Physo-Salpinx). S. Hennig, in his book "*Krankheiten der Eileiter*," p. 52, surmises that, in cases of putrid endometritis and physometra, gases may escape from the tubes into the peritoneal cavity.

Our present knowledge of the above mentioned pathogenous micro-organisms will enable us to divide them into three groups:

GROUP 1.—FORMS OF SALPINGITIS PRODUCED BY KNOWN SPECIFIC MICROBES.

1. *Salpingitis gonorrhoica*, produced by the gonococcus of Neisser.

2. *Salpingitis tuberculosa*, produced by the *bacillus tuberculosis* of Koch.

3. *Salpingitis actinomycotica*, produced by the *actinomyces bovis* of Bollinger.

1. *Salpingitis gonorrhoica* in the only specific infectious form of salpingitis which is recognized as such by Lawson Tait, although he stops short of admitting that the gonococcus is the exciting agent. Without doubt the gonorrhœal is the form most frequently met with. This fact was clinically established as early as 1872, by Nöggerath, long before Neisser had discovered his gonococci or Lawson Tait performed his first operations for "suppuration of the uterine appendages." In Germany, I myself was one of the first gynæcologists who at our meetings showed the frequency of gonorrhœal salpingitis, emphasized its causal connection with pelveo-peritonitis, and removed by operation the gravely implicated uterine adnexa. (Magdeburg, 1884, and Munich, 1886.) Gonorrhœal salpingitis is never followed by a destructive "suppuration" of the uterine appendages; it remains invariably a disease of the surfaces of the mucous and serous membranes. The pus formed by the specifically diseased mucous membrane gradually distends the tube; in one class of cases in which there is a great accumulation of free pus the tube is transformed into a large sac with thin walls, in another in which the wall of the tube, especially its muscular tissue, is hypertrophied to a greater extent, the tube becomes much thickened and rigid. In most cases, both conditions are found, the uterine portion of the tube is thickened, the abdominal end dilated. The serous surfaces of the tubes, the albuginea of the ovaries, the serosa of the peritoneum are attacked or become pus secreting surfaces only in cases in which gonorrhœal pus has escaped from the tubes, and thus infected the above named structures. We may then have peri-salpingitis, peri-oöphoritis, peri-metritis, s. *pelveo-peritonitis purulenta gonorrhoica*. I do not believe that gonorrhœal pus ever penetrates the walls of the tubes and thus produces these diseases. But a specific gonorrhœal inflammation of the mucous membrane of the tube, with secretion of pus into the cavity of the latter, is accompanied by a non-specific inflammation of the entire tubal wall. This may also excite peri salpingitis, peri-oöphoritis and so forth; the organs involved may become adherent to each other and displaced, but we never meet with a purulent exudate of the same nature as that found in the cavity of the tube itself. This also explains why, in some instances, gonorrhœal disease of the uterine appendages is accompanied by severe and violent symptoms, frequently resembling those of a peritonitis following perforation, whereas in other instances it develops insiduously, scarcely manifesting any symptoms at all. In the former cases, gonorrhœal pus escapes through the *ostium abdominale* into the peritoneal cavity; in the latter the inflammation of the external surfaces of the adnexa is non-specific in character.

According to what I have just stated, I must necessarily regard the terms. "suppuration of the uterine appendices and peri-uterine s. pelvic abscess." as inaccurate, and from a general pathological point of view, as productive of confusion; we invariably find free pus in the tubes and peritoneal cavity or an inflammation of the adnexa, but never destructive suppuration of the tissues of the pelvic organs. In cases in which abscesses are discovered in the walls of the tubes, in the tissues of the *ligamenta lata* and in the ovaries, these abscesses are, as I shall later on show, due to septic infection, but not to gonorrhœa.

The latter disease produces suppuration only on surfaces.

I purposely enlarged somewhat on gonorrhœal salpingitis and its consequences, as this form presents a typical example of infectious salpingitis in general.

There is one more point to which I wish to call attention. Gonococci have not always been discovered in pus coming from the tubes, in cases in which clinically there existed no doubt as to the gonorrhœal nature of the infection. The conditions under which the gonococci are destroyed, or prevented from further development, have not yet been ascertained; further investigation will also have to show whether, in cases in which gonococci are absent, there are not present other microbes belonging to one of the groups mentioned further on.

2. *Salpingitis tuberculosa.*—Alfred Hegar's lately published work, "*Enstehung, Diagnose und Chirurgische Behandlung der Genitaltuberculose des Weibes,*" relieves me of the necessity of entering more fully into the consideration of this form of salpingitis. Lawson Tait denies the existence of this form, or rather, he admits it, but only "for the third and contracting stage of pyosalpinx." This admission simply discloses his ignorance of the true nature of tuberculous infection. The pus in a case of purulent salpingitis, whether it be gonorrhœal or otherwise, may of course undergo caseation. This was called tuberculization before Koch's discovery of the *bacillus tuberculosis;* now it is termed coagulation-necrosis, according to Cohnheim-Weigert. It is this, which Lawson Tait confounds with the genuine infection by the bacillus of tuberculosis.

A pyosalpinx may remain in this third stage indefinitely; a tuberculous salpingitis will never result therefrom unless there be added a tuberculous infection.

3. *Salpingitis actinomycotica.*—This form is called by Lawson Tait "an equally ridiculous subdivision based on mere theory, not on fact." It seems to me before making such an unintelligible assertion it would have been his duty to enquire whether there really is no case on record to support me in including this form in my enumeration. In my paper, above mentioned, I named the author who had furnished this case; I will now accurately give my authority: Adolph Zemann, "*Uber die Aktinomycose des Bauchfells und der Baucheingeweide beim Menschen, Medicin. Jarhbücher der K. K. Gesellsch, Arzte in Wein,*" 1883, S. 477, Fall 4. The tubes in this case were dilated and filled with pus and clumps of the actinomyces, their walls were thickened and exhibited numerous granulations produced by the fungus. The fungus had migrated either from the vagina or from the intestines which were found extensively adherent to the tubes. What Lawson Tait does not know, has no existence for him. "Germanica sunt, non leguntur."

GROUP II.—FORMS OF SALPINGITIS DUE TO SPECIFIC MICROBES IDENTICAL WITH THOSE PRODUCING TRAUMATIC INFECTION.

Salpingitis septica (*pyæmica, ichorosa, purulenta, diphtheritica*).—The term *salpingitis septica,* is rather general and inaccurate; as when speaking of a pyosalpinx we simply mean that the tube contains pus, when employing the term *salpingitis septica* we merely indicate that the disease is due to infection by a septic virus. It is at the present time, a matter of extreme difficulty to diagnose the nature of the pus, and the nature of the infection presented to us in an individual case. Now, we certainly know that the microbes producing the different kinds of traumatic infection known clinically as septicæmia, pyæmia, diphtheria, phlegmon, erysipelas, may one and all invade the general tract; we may, hence, infer the existence of an equal number of varieties of salpingitis, *i. e. salpingitis septica, pyæmica, diphtheritica, phlegmonosa, erysipelatosa.* In order to complete our scheme we should add *salpingitis putrida,* corresponding to putrid infection, whereby the difficulties are still further increased.

Notwithstanding the progress made in bacteriology, we have not yet succeeded in isolating and classifying the microbes which cause the clinically different forms of traumatic infection; consequently it is impossible to do this with regard to the different forms of *salpingitis septica.* However, the work done by Doléris, E. Fränkel, Lomer, A. H. Barbour, Nöggerath, Cushing, in the domain of puerperal infection has given us some positive results.

These are two points which are to be considered fundamental:

(1). The microbes of puerperal septicæmia are identical with those producing traumatic infection in general. During the puerperium after abortion, as well as after parturition at term, the genital track is far more susceptible to infection, or the conditions are far more favorable to the spreading of infection, than at other times.

(2). As has been demonstrated by Ogston, Hueter and Rosenbach, all suppuration is due to the action of microbes; several varieties of these, like the *streptococcus pyogenes* and *staphylococcus pyogenes,* have been closely studied, but it is known that they are not the only varieties which produce pus. As doubtless all of these carriers of infection may play a rôle in the production of salpingitis, we can readily see how complicated the question of infectious diseases of the tubes has become, and how unscientific and untenable is the meaningless name of pyosalpinx. Yet there is a certain comfort in hoping that the matter may be somewhat simplified. Some of the forms of traumatic infection, for instance, sepsis, and diphtheria, pyæmia and phlegmon, are probably produced by identical micro organisms, and the course of the disease may be modified by the nature of the tissue first attacked, and by the manner in which the infection spreads, whether by the blood or lymph channels.

All of these infections, as is well known, have a double effect—a local one in the genital tract, and a constitutional one, which is brought about through the medium of the circulation, and which is seen not only in the system at large, but also in the localization of the infection in organs distant from the point of entrance of the micro-organisms. When systemic effects are produced by the virus of putrid infection,

the disease is called sapræmia; when by the virus of septic infection, septic toxæmia or ptomaine poisoning; when by that of purulent infection, pyæmia.

We thus meet with an essential difference between the diseases of the genital tract, produced by the microbes of Group I, and those of the traumatic infection. The above mentioned severe and acute constitutional symptoms are but slightly indicated, or may even be absent in the diseases of the first group, *i. e.* gonorrhœa, tuberculosis, actinomycosis, whose course is chronic; whereas in diseases of the second group, the rapidity of their development, and the malignity of their course may almost entirely obscure the local disturbance in the genital tract.

As is readily seen, the septic diseases of the tubes are not independent diseases; aside from the local disturbances co existing in the uterus, vagina and external genitals, the whole circulatory system is usually affected. In this respect, as Lawson Tait rightly remarks, septic disease of the tubes is not a specific ailment; this, however, is of no importance in an enumeration of the varieties of salpingitis. An endometritis or a *colpitis gonorrhoica* may coexist with a *salpingitis gonorrhoica*, and in the same way *salpingitis septica* may be accompanied by other diseases of the sexual organs, which are due to the same cause. There is, of course, no such thing as an affection of the tubes merely.

Salpingitis septica, co existing with severe puerperal septicæmia or "lymphatic peritonitis," has never as yet, it is true, given the surgeon an opportunity to remove the principal focus of the disease by extirpation of the tubes. It is possible, however, that under certain circumstances such a procedure might be indicated. B. S. Schultze, "*s. Verhandl. d. gynækolog. Section d. Versammlung deutscher Naturforscher*," in Berlin, 1886, has lately succeeded in amputating a puerperal uterus, in a case in which it was impossible otherwise to remove the placenta, which had become the source of septic infection. Lately two cases came to my knowledge in which the tubes burst from over-distension with pus, whose nature, whether gonorrhœal or septic, was not ascertained. In both cases a general peritonitis resulted, which proved fatal, in one on the fourth, in the other on the twenty-first day after confinement. It is clear that in both these cases the salpingitis had existed before delivery. I shall afterwards relate a case of my own in which this certainty was the condition. Cases of this kind will be diagnosed more frequently and more readily as soon as our attention has been called to them, and we may then expect to hear of their treatment by operation. Cases of salpingitis, consequent upon traumatic infection in non-puerperal women, are, of course, of much more frequent occurrence. The carriers of infection may, for instance, be directly introduced into the tubes by means of an infected sound. The introduction of a septic instrument into the uterine cavity may be followed by a septic salpingitis. In cases in which we observe an exudative pelveo-peritonitis after the introduction of an infecting sound, after an intra-uterine injection or a *eurettement* of the *mucosa uteri*, the infection almost always spreads to the pelvic peritoneum by way of the tubes and exceptionally only through the muscular walls of the uterus. The severe systemic disturbances, the diseases of the uterus and pelvic peritoneum, may gradually subside, whereas the tubal affection remains. A pyosalpinx has formed, the tubes are filled with pus, which can have been produced only by the action of one of the specific microbes of traumatic infection: perhaps by the *staphylococcus pyogenes*.

Two cases of my own may serve as illustrations. In one of them a physician had performed *abraiso mucosæ uteri* without antiseptic precautions, infection took place and a *pelveo-peritonitis exudativa* followed, after the subsidence of which I could easily feel each tube thickened to the size of a thumb. At the operation both tubes were discovered to have thinned walls and to contain thick pus resembling that found in an abscess. The ovaries were small and enveloped in masses of very dense, connective tissue. I removed the tubes, but left the ovaries. The woman made a good recovery. The adnexa had been in a healthy condition before the mucous membrane of the uterus had been scraped. I have already published the other case (*"Verhandlungen der Gesellch. f. Geburtsh," zu Leipzig*, 17 April, 1882; *"Centralb. f. Gynæk."* 1882, p. 558); multipara of twenty-nine years; three spontaneous deliveries, at fourth *placenta prævia*, and forceps applied before complete dilatation of the os. Puerperal fever. Recovery, but permanent pains in the right epigastrium. A short time after, renewed pregnancy, in the third month of which a prominent gynæcologist ascertained disease of the right uterine appendages; at full term rapid and spontaneous delivery. On the third and subsequent days of the puerperium, chills, high intermitting fever, icterus, in short the symptoms of acute pyæmia. Death on the thirtieth day. The autopsy revealed *salpingitis purulenta dextra*, and several abscesses in the right ovary and right broad ligament. The remainder of the genital organs, the adnexa on the left side normal. I explain the course which the disease took in this case in the following way: At the fourth parturition, septic infection and localization of the disease in the uterus and the appendages on the right side; subsidence of the grave constitutional disturbances and persistence of a pyosalpinx, probably due to *streptoccocus pyogenes*, latency of pyosalpinx during subsequent pregnancy. After delivery increased absorption of pus, abscesses in the ovary and broad ligament, acute pyæmia and death. In a case of this kind a septic-infectious disease, originally extending over large portions of the sexual tract, is finally concentrated in the tubes. Why should not such a case, in which the tubes chiefly appear affected, present a "specific ailment" as well as does a case of *pyosalpinx gonorrhoica*, in which *ceteris paribus* we have the same limitation of the disease to the tube as a principal focus for further infection.

What I desire to prove by these somewhat extensive remarks is, briefly, as follows:

1. Numerous cases of *salpingitis purulenta* ("pyosalpinx") are due to traumatic infection, are septic forms of salpingitis.

2. There are as many forms of septic salpingitis as there are forms of traumatic infection, and of microbes producing the same.

There is, however, an additional reason why Lawson Tait denies septic salpingitis to be a specific ailment. As we see from his startling remarks in the *Medical News*, April 24, 1886, he does not believe in sepsis at all, does not believe in infection, denies the principles on which the practice of modern surgery and obstetrics is based. He has been taught nothing by the researches of Semmelweis and Lister, Pasteur and Koch. And why? Because his own success in combating septic infection is to him proof of the non existence of septic infection. We are accustomed to Lawson Tait's reckless statements. Without taking the trouble to refute them scientifically, I but wish to call to mind his assertion that menstruation does not depend upon the ovaries, but upon the tubes; that the mortality of the Cæsarean operation is still 99⅔ per cent. His denial of traumatic infection is a statement of the same kind. I should like to hear Lawson Tait's answer to the following questions:

1. What disease, before the introduction of Listerism, killed trousands of patients who had received wounds or who had been operated upon? What, according to his views, was the cause of death in his own cases, when he lost patients after operations, if not, as everybody else believes, septic infection?

2. What is puerperal fever?

Lawson Tait disputes the correctness of our teachings regarding infection, but he has failed to give us any other explanation of its phenomena.

(*To be concluded.*)

DOMESTIC CORRESPONDENCE

"ELECTROLYSIS IN UTERINE FIBROIDS."

Dear Sir:—In Dr. Cutter's letter of last week, "Electrolysis in Uterine Fibroids," I am indirectly criticised for remarks that I wish to modify somewhat as far as they concern me. Dr. Belfield's remarks on my article, "Electrolysis in Gynecology, with a Description of Dr. Apostoli's Method," were quoted by Dr. Cutter, and these remarks made me appear to say, "During the last twenty-five years various attempts have been made to reduce fibroids of the uterus by the galvanic current; yet none of them have been recognized as successful; because, doubtless, as Dr. Martin very properly says, the current has been used in an ignorant, inaccurate and bungling way." I do not wish to be understood as saying, "yet none of them have been recognized as being successful," because I have reported successful cases within the last two years of my own, and have also quoted successful cases of other operators. Neither do I wish to be quoted as saying, "the current has been used in an ignorant, inaccurate and bungling way," because it is not what I said, although I do not impute to the author of the remark any intention to misquote. What I *did* say, however, was this: "Unfortunately, the term electrolysis, as applied to the treatment of diseases, has been by many, for some unaccountable reason, greatly misunderstood." This statement, while it does not differ widely from the remark quoted, is somewhat modified and not nearly as sweeping.

Dr. Cutter, I am sure, will agree with me, after having had sixteen years' experience with this method of treatment, that there is a great deal of ignorance abroad in regard to the principles it involves. He must also admit that improvements in the methods of electrolytic treatmen· have been rapid, and that with the new improvements in electrodes and means of measurement of the current, its usage is rapidly resolving itself into a science.

Within the last three years I have been able, by adopting improved electrodes, to increase the maximum strength of current used through a fibroid tumor without causing pain enough to require an anæsthetic, from 25 milliampères to 10 ampères—and this with *one surface electrode*. All who are acquainted with the history of electrolysis in the treatment of fibroid tumors will concede to Dr. Cutter his claim of priority in that field. Respectfully yours,

FRANKLIN H. MARTIN, M.D.

163 State St., Chicago, Feb. 8, 1887.

CASE OF GANGRENE OF THE MOUTH.

Dear Sir:—I desire to report the following case: Stella S., æt. 4 years, was attacked with gangrena orum on December 22, 1886. A gangrenous condition presented itself over all the visible part of the mouth, including the lips. There was fever, restlessness, loss of appetite. The face had a livid, sunken appearance. The discharge from the mouth was fetid and had the ante-mortem odor. The mouth finally presented a brownish-black and dry appearance, with black ulcers on the lips. The mouth and lips often bled. I put the child first on tinc. of chloride of iron and chlorate of potassium, and washed the mouth with a saturated solution of chlorate of potassium. No improvement took place until Christmas day, after I had changed the chlorate of potassium wash for a wash of bromo-chloralum, ℥ij to the pint of water, and to-day, December 31, the mouth is moist and clearing, the fetor is subsiding and the appetite is improving. In fact, the child is convalescing.

About the time I commenced the solution of bromo-chloralum I had a powder of subnitrate of bismuth blown through a quill into the mouth of the child. I think the bromo-chloralum is worthy of trial in these cases of gangrene of the mouth. J. M. BATTEN.

309 Fifth Ave., Pittsburg, Pa., Dec. 31, 1886.

SECRET REMEDIES.

Dear Sir:—In THE JOURNAL of January 15 is a communication from Dr. Amos Sawyer on "Rumex Acetosa" as the probable secret remedy used by traveling cancer doctors for taking out tumors. His falling on the article used *by chance* reminded me of a secret with which I was entrusted some two years since. I had operated on an old gentleman for cat-

aract, and one day, when visiting him, he told me if he received sight from the operation he would give me two valuable recipes: one a sure cure for cancer, the other a never-failing cure for all kinds of sore eyes. To sum up the results of the operation, I got the recipes. Here is the one for cancer: Gather the leaves of the common sheep sorrel, bruise them by pounding, and press out the juice; put the juice in a thin layer in a wide and flat-bottomed new tin pan and set in the sun; when evaporated to the consistency of honey, scrape up with a knife and spread on a piece of cloth large enough to cover the cancer, and bind it on. For two or three hours the pain will be intense, but will then subside. In twelve to twenty-four hours, according to the size and depth of the cancer, it should be taken off, and the cancer will be found loose to its *roots* and will readily come out. He claimed to have seen it used successfully a number of times, and never knew it to fail. Of course, *diagnosis* was a small matter with him; the *cure* was all he wanted.

On speaking of this one day to one of our old and respected physicians, he told me he saw this same remedy tried twenty-five or thirty years ago. A patient of his had cancer, and friends urged a trial of sheep sorrel. He consented and it was applied. The cancer failed to come away and the patient finally died from it. According to the above formula, would not oxalate of tin be the product? Might it not be well to experiment a little along this line? I write this, also, to show Dr. Sawyer how widespread *secret remedies* sometimes are. Very truly,

T. E. MURRELL, M.D.

111 E. Fifth St., Little Rock, Ark.

ASSOCIATION ITEMS.

AMERICAN MEDICAL ASSOCIATION.

Section of Medical Jurisprudence.

The following valuable and instructive papers will be read at the coming meeting:

James G. Kiernan, M.D., Chicago (two papers): "State Supervision of the Insane;" "Medico-Legal Relations of Epilepsy."

Joseph F. Edwards, A.M., M.D., Editor *The Annals of Hygiene*, Philadelphia, Pa.: "The Suppression of the Illegal Practice of Medicine."

Judge Amos G. Hull, Counselor-at-Law of New York Bar: "Medical Jurisprudence in its Relations to undue influences as affecting Wills and Contracts."

These papers the authors *positively* promise to be *present* and *read*. Besides these, almost positive assurance of papers has been received from Prof. H. O. Marcy, Boston, Mass.; Dr. W. C. Wile, Philadelphia, Pa.; Dr. F. E. Daniels, Editor *Texas Medical Journal*, Austin, Tex.; Dr. E. C. Spitzka, New York; and Dr. Herman J. Boldt, New York.

As titles of papers are received they shall be forwarded for publication in THE JOURNAL.

I. N. QUIMBY, M.D., Chairman.

582 Jersey Ave., Jersey City, N. J.

MISCELLANEOUS.

DR. J. ADAMS ALLEN, President of Rush Medical College, Chicago, was on Wednesday made the recipient of a handsome present from the students of the College. The doctor had entered the class-room for the purpose of delivering his usual lecture when L. E. Tifft, one of the students, interrupted the routine proceedings, and on behalf of his fellow-students presented "Uncle Allen," as the doctor is familiarly called, with a "tripod," consisting of a fat, chubby hand, made of solid gold. The thumb and little finger of the hand were bent so as to touch, the remaining digits being extended. The hand was set on a small block of alabaster, and this, in turn, on a base of black onyx. On the onyx was a solid gold plate bearing this inscription:

UNCLE ALLEN'S TRIPOD.
Remember these three
When we practice the art:
The condition of blood,
The nerves, and the heart.

The quotation is a verse of a college song based on some of Dr. Allen's sayings, and the position of the hand is a favorite one with him when addressing the students. The doctor was greatly surprised on receiving the present, but managed to thank the boys in a way to make them feel happy. He sails Saturday next for Europe, to be gone until September, and this presentation was a token of the good wishes of the students.

THE Governor of New York, in his annual message, has called attention to the practice of adulterating drugs, and denounced it in appropriate terms. Governors of the other States might follow his example with advantage to the profession and the people.

DR. WM. PERRY, the oldest person in Exeter, N. H., and the oldest graduate of Harvard College, died on January 11, aged 98 years. He was the sole survivor of the passengers on Fulton's first steamboat trip down the Hudson River, seventy-nine years ago.

A PHYSICIAN'S PROTECTIVE ASSOCIATION is being organized in Indianapolis.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 29, 1887, TO FEBRUARY 4, 1887

Capt. Junius L. Powell, Asst. Surgeon, granted leave of absence for two months, to take effect when his services can be spared by his department commander. S. O. 24, A. G. O., Jan. 29, 1887.

First Lieut. Paul Clendenin, Asst. Surgeon, ordered for duty as Post Surgeon at Camp Pena Colorado, Texas. S. O. 14, Dept. Texas, Jan. 26, 1887.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE SIX WEEKS ENDED JANUARY 29, 1887.

Wyman, Walter, Surgeon, granted leave of absence for three days. Jan. 14, 1887.

Wheeler, W. A., P. A. Surgeon, to proceed to Erie, Pa., as Inspector. Jan. 12, 1887.

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ORIGINAL ARTICLES.

THE AFTER-TREATMENT OF CATARACT EXTRACTION AND IRIDECTOMY ACCORDING TO DR. MICHELL'S METHODS.

BY T. E. MURRELL, M.D.,
OF LITTLE ROCK, ARK.

Dr. Charles Michell's method of dressing an eye after extraction of the lens and after iridectomy, together with the non-exclusion of light from the eye at any time subsequent to the operation, was brought before the general profession of the country for the first time in St. Louis last May, in the Section of Ophthalmology of the American Medical Association. As might be expected, it created no little surprise. Opinion was divided as to the propriety of such seemingly extreme measures. Dr. Chisolm said, for one, he would test it. How many others have made a test of it I know not, but it is somewhat surprising that so little literature on the subject has thus far appeared. Evidently few have ventured to put the matter to the test else, I think, more would have been written in commendation of so valuable an acquisition to ophthalmic surgery. In the *American Journal of Ophthalmology*, June number, Dr. Chisolm reports sixteen cases in which he used Dr. Michell's after-treatment with most flattering results. Again, in a more lengthy report in the *N. Y. Medical Record*, of July 31, he further comments on the after-management of extractions, and adds other cases from which he draws conclusions more firmly confirming his faith in the safety and advantages of the innovation. Dr. Michell very modestly gives an account of how he came to adopt this dressing, and to allow the patient abundant light after extractions, in the third number of the *Archives of Ophthalmology* for 1886. He has been too modest in bringing this matter before the world; besides, I regard it so valuable as to have made it his duty long since to have done so. As for myself, I am willing to subscribe to Dr. Chisolm's strongest commendations, having used no other after-treatment in extractions and iridectomies since last May, when Dr. Michell very kindly gave me in person all the details of the treatment. Nothing can be more simple, and nothing more sensible.

As would be expected, claims of priority are now coming in. One writer asserts that for fifteen years or more Dr. Levis, of Philadelphia, has discarded bandages. He is not alone in this. Some of the English and Continental surgeons have been in the habit of dressing the eye after extraction with strips of adhesive plaster, but they were very careful to keep the patient in a *dark room*. See "Wells on the Eye," third edition, p. 268; "Haynes Walton on the Eye," third edition, pp. 788–89, and other works that might be cited; some preferring the compress bandage, some the adhesive strips. As I understand, Dr. Levis' dressing consists of a piece of black court-plaster completely covering both lids, leaving only a small opening at the inner canthus to allow the escape of tears. I don't know whether he uses a dark room or not, but he could not more effectually exclude the light than by the above dressing. In the August issue of *Progress*, Dr. Dudley S. Reynolds, of Louisville, Ky., puts in a claim in the following words: "The use of the bandage after extraction of cataract has long since been abandoned by the writer. Instead of this useless and sometimes dangerous form of dressing, a little dry absorbent cotton, secured by strips of adhesive plaster drawn from the cheek to the forehead, answers a better purpose." He makes no mention of a dark room, but had he not regarded the light, he would not have omitted putting in his claim here also, since it is one of the strong points in Dr. Michell's methods. Dr. Reynolds' dressing defeats two important features in the after-treatment under consideration, viz.: the filling in of the orbital space with cotton heats the eye, excludes the light, and precludes the daily inspection of the lids without disturbing the dressing; and second, the play of the facial muscles would certainly disturb the equilibrium of the dressing through traction on the adhesive strips. These, the two strongest claims yet put forward, speak for themselves, while whatever honor may come of this valuable measure certainly belongs to Dr. Charles E. Michell.

In my former experience after extraction I had much trouble with slow convalescence, and long-continued photophobia oftentimes; and, in addition, quite a large percentage of iritis of a mild grade, which usually made its appearance after the fifth day. None of these have troubled me with the new after-treatment, and I now feel quite sure that the majority of iritic inflammations were the result of exposure of the eye to a bright light at the time of the first examination. It was always painful and caused a flow of tears. Well do I remember how I used to go through the eye wards in Baltimore and in New York with the surgeon to dress the eyes op-

erated for cataract, with candle in hand, to see how to change the dressing. And when I began practice I followed in my preceptor's tracks, and carefully excluded every ray of light. I came to notice, however, in the course of time, that the more effectually the light was excluded the more intense and the more persistent the photophobia; hence I came gradually to be less careful of utter darkness, until I had come to using a well lighted room for the patient, and only using the cotton and bandage dressing over the eyes. I always directed, if the light was too bright, to put a piece of black goods over the bandage, but I found they seldom called for this. On hearing, therefore, of Dr. Michell's after-treatment, I felt prepared to try it at once. To show what I founded my faith on, I give, by way of illustrating the effects of this simple treatment, a few cases from my record book:

Case 1.—Miss W., æt. 23. Old irido cyelitis, with exclusion of the pupils and opacity of the lens in each eye. V= perception of light. Extracted the right lens, leaving a thick calcareous capsule. Dark room and bandage. Ten days later removed the bandage permanently and put on a shade for the eyes. There was some iritis at this time, which soon subsided, but the most intense photophobia continued for fully a month, and it was after two months or more that she could tolerate full daylight without discomfort. Some months later I extracted the left lens in its capsule, which was also treated with bandage and dark room, and was followed by a like train of iritis and long continued photophobia. These operations were performed last winter and spring. In September of this year I extracted the calcareous capsule from the right eye. It was a dense hull of lime salts so thick that it crushed like egg shell. A large corneal section was made and the mass seized with forceps and withdrawn. Both eyes were dressed with a narrow strip of isinglass plaster just long enough to catch well on the two lids and hold them together. The room in which she stayed had two large east windows without blinds, curtains or shades. and I directed that none be put up. The walls being white, the light in the room was very bright. The morning sun shone in her face and she found it more comfortable to put a screen between her face and the window until the sunshine had gotten off of her bed. No other discomfort was complained of. On the fifth day the left eye was turned loose, and on the seventh day the right. She was at once given the liberties of the house, and on calling to see her the next day I found her walking in the yard barehead, with a bright sun overhead, utterly indifferent to the light. There was no iritis or photophobia at any time.

Case 2.—Mrs. R., æt. 81. Hyper-mature cataract in the right eye, dislocated downwards fully one-third its diameter; fluid vitreous.

July 22, made an upward iridectomy. Lids closed with narrow strips of isinglass plaster and full day light allowed in the room. Six days later liberated both eyes and let her go where she pleased. A mild conjunctivitis ensued, but there was no photophobia whatever. The result of the iridectomy was not satisfactory as regards vision on account of a filmy opacity above the periphery of the lens; so on September 29 I removed the lens and its capsule. The after-treatment was the same as before. No pain at any time. On the eighth day removed the plaster and gave her the liberties of the house. There was union by first intention, a clear black pupil, and not the slightest trace of iritic engorgement. The effect of full daylight was not at all disagreeable from the first exposure of the eye. Ophthalmoscopic examination revealed a fluid vitreous with floating opacities from former choroiditis, and of course there was but moderate vision.

Case 3.—Mr. S., æt. 76. Cataract in both eyes. August 2 I extracted the right lens and dressed both eyes in the usual way, allowing the light in the room just as they had been accustomed to having it. On the fifth day I removed the strip of plaster from the left eye, and on the seventh day from the right. Perfect healing, no iritis, no photophobia or lachrymation, no discomfort of any kind. He was out in the bright sun in less than two weeks, and remarked that daylight seemed brighter to him than it ever did in his life, much like being near an electric light; but it was not at all disagreeable, and caused no irritation of the eye. He soon went to work at his trade—type-setting.

Case 4.—Mr. Y., æt. 60. Is nearly blind in his left eye from old choroiditis, and has immature cataract in his right eye, with which he can still count fingers readily at four feet. I determined to operate. On September 12 I extracted the right lens, taking pains to remove as nearly as possible all the cortical substance. Closed the eyes with a strip of isinglass plaster on each, and directed that the window blinds be left open and the curtains kept up. Before leaving the room I noticed that the lids of the right eye had not been drawn closely together, sufficient space intervening for me to see the cornea. I did not interfere, however, as Dr. Michell had told me he frequently left a small space between the lids on purpose to allow the easy escape of the tears. When I called the next day the patient exultingly told me how he lay in bed and counted the bars in the window frame, and his fingers at arm's length, and saw across the street with the eye that had been operated on. As all was going well, I did not disturb his recreations.

On the sixth day I turned his eyes loose, and on the eighth day he walked to my office, underwent a thorough ophthalmoscopic examination and test for glasses, and took the train for home, one hundred miles distant. I received a letter from him a few days since, saying his eye had never given him a particle of trouble. I never saw so little restraint after operating for cataract as in this case, nor did I ever see smoother healing.

Case 5.—G. W, Negro, æt. 70. Cataract in both eyes, mature in left. November 6 operated at the Medical College before the class, removing the right lens. Operation smooth. A narrow strip of plaster to close each eye. After the operation he walked down stairs and sat by a stove nearly an hour, waiting for some way to get home. Finally a wagon called and he got in and rode to his home, more than

a mile distant, over very rough streets. I directed that the light should not be excluded from the eyes, but his prudent wife carefully sealed all cracks and hung quilts over all windows. On calling the following day I found a pitch dark room, and in addition found the old darkey lost in a wilderness of blankets and comforts wrapped about his head. I at once stripped all the windows and uncovered his head, and enjoined him and his wife not to repeat it. On the fifth day from the operation I found the old man with both eyes wide open, enjoying himself in looking about the room. Finding the corneal wound nicely healed, I did not put on the strips again, but let him go free. About two weeks later I saw him driving a wagon on the streets. Not long since he called at my office and received a formula for glasses, with the effect of which he was delighted.

It is not worth while to report other cases, including iridectomies, as those already given are sufficient to demonstrate the effect of not placing the patient in the dark after an extraction or iridectomy. The foregoing cases have not been selected from the most favorable. In the second case there was fluid vitreous and a very hazardous eye to operate on, and which I undertook with considerable misgivings. Those who have attempted removing a dislocated lens with a fluid vitreous can appreciate my feelings. And in case 3 there was an incurable stricture of the nasal duct, chronic abscess of the lachrymal sac, and a lachrymal fistula. I should have greatly dreaded bandaging this eye, covered with cotton, and yet with free escape to the secretions and careful daily inspection of the lids and soaking away the secretions from the inner canthus with absorbent cotton, it healed without an untoward result.

I have not yet ventured to treat iridectomy as an office operation, as does Dr. Michell, but my experience with case 5 goes far toward proving its safety. I leave to others to draw their own conclusions from experience, as I have done, and in conclusion will say, I shall use no other method of after treatment of extractions and iridectomies until something better offers, which, in the nature of things, I cannot now conceive of.

111 E. Fifth St., Little Rock, Ark., Dec. 20, 1886.

INTUBATION OF THE LARYNX, HISTORY OF FOUR CASES.

BY L. H. DUNNING, M.D.,
SOUTH BEND, IND.

The unusual interest manifested by physicians in the treatment of pseudo-membranous croup by the O'Dwyer method, induces me to report the following cases:

Case 1.—Nov. 18, 1886, I was asked by Dr. Kettring to see a child of Mr. Galata, of this city. I responded at once and found a well-marked case of pseudo-membranous croup that had been in progress six days. It had commenced lightly and gradually grown severe until now it threatened to prove speedily fatal. I advised intubation of the larynx or tracheotomy, giving preference to the former procedure. The family consenting, Dr. Kettring was called and concurred in my diagnosis, and agreed to the plan of treatment. We proceeded at once to introduce the tube, using the size for a child 2 to 3 years of age, our patient being 2 years and 4 months old. A marked improvement in respiration occurred in two or three minutes after the thread was removed. Stimulants were ordered, and drachm doses of a saturated solution of potass. chlor. every three hours. At 4 P.M., five hours after intubation, the patient was resting and breathing easily. Continued the same treatment.

19th. Patient rested well last night, but did not sleep much. She is now breathing easily. Temp. 100, pulse 115 and resp. 24 per minute. The child objects to medicine and nourishment, so everything has to be forced, and family are not willing to give either. The same orders were given as yesterday.

20th, 8 A.M. Patient rested but little during the night, but breathed easily. This morning is quiet. There is considerable cough and profuse expectoration, in which occasionally appear shreds of pseudo-membrane. The patches of membrane have nearly all disappeared from the fauces. The bowels moved several times during the night. Temp. 99.5, pulse 105 and resp. 20 per minute. Has taken but little nourishment. Same treatment. 5 P.M. Same condition as in the morning, except that there are sonorous and sibilant râles to be heard all over chest.

21st, 8 A.M. Bronchitis somewhat more pronounced. The breathing is easy and regular, and the pseudo-membrane has all disappeared from the fauces. The expectoration is profuse. The patient is very weak, and this is due largely to its refusal to take nourishment. Believing the danger from croup had nearly or quite disappeared, the tube was removed, Dr. Hitchcock assisting. It was quickly removed upon first effort, and came away clear of obstruction. After its removal there were but slight indications of croup. From this time on the case was uneventful, passing on to complete recovery in a few days.

Case 2.—Essie B., aged 2 years and 4 months. She had been ill of bronchitis several days. Upon November 26 she became very hoarse, and there was a slight croupy cough.

Nov. 28, 7 A M. During the night the child had had several slight paroxysms of dyspnœa that yielded readily to emesis.

Dec. 1. Despite the most energetic measures, there has developed a most alarming case of membranous croup. There is continuous labored breathing and severe and prolonged attacks of dyspnœa. Dr. Kilmer had seen the case with me a number of times. He was called again, and after consultation we decided to intube the larynx, as in this procedure or tracheotomy we saw the only hope of recovery. At 1 P.M. the tube was introduced, and considerable difficulty was experienced in securely placing it in position. The difficulty was in pushing it down into place. There was considerable resistance, and when left in place was inclined to rise out of the larynx. After the second effort it was left well in position.

In removing the thread it broke off, but as we could see nothing of it on depressing the tongue, we thought best to wait a time to see if it produced any reflex irritation. At the end of one half-hour the tube had given no relief and the child had one severe attack of dyspnœa, so it was removed, and in a few minutes replaced with the assistance of Dr. Hitchcock, Dr. Kilmer being detained elsewhere. This time the child experienced perfect relief, and soon fell into a quiet sleep.

6 P.M. Was called in haste and found the patient apparently in a state of collapse, having cold hands and feet and a pinched, sunken appearance about the face. The respirations were hurried, but not difficult. Ordered whiskey and comp. spts. lavender by mouth, stimulant and nutritive enema. The nurse was directed to rub the child with hot whiskey frequently. 8 P.M. Patient has rallied and is now breathing easily, though sonorous and sibilant râles are distinct over whole chest.

Dec. 2. Child rested well during the night, but had a few slight attacks of dyspnœa.

Dec. 3. Respiration hurried and somewhat difficult. Patient has had two attacks of dyspnœa during the last hour. Large quantities of mucus and shreds of pseudo membrane are being coughed up. Loud sonorous and sibilant râles heard over upper part of chest. 12 M. Dyspnœa more frequent. Breathing more labored and râles more distinct. Over the upper part of the chest rough grating sounds are heard instead of respiratory murmurs. 5 P.M. The condition above described is more marked. Had consultation with Drs. Kilmer and Hitchcock. It was concluded that there was an extension downwards of the diseased condition, that the larger bronchial tubes were becoming gradually occluded by intumescence of the mucous membrane and by deposition of pseudo membrane. Prognosis exceedingly unfavorable. Even now the respiration is so much less than it was before the tube was inserted that the parents refused to allow it to be removed. From this time the patient grew gradually worse until 9:30, when it expired.

Case 3.—Merritt F., aged 3½ years, resides in the country. I was called to see him December 9, 1886. Found a well developed case of diphtheria, with pseudo-membrane covering both tonsils, soft palate and uvula. Patient complained of being tired; was sitting up part of the time, and the remainder of the time lying upon the lounge. The temperature was 100.6, the pulse 120, and resp. 22 per minute. Prescribed tr. chlor. ferri and chlor. potass. locally, and internally small doses of calomel, and sponge baths of tepid water, to be followed by inunctions of quinia and lard, were also ordered.

Dec. 11. The throat is clear of pseudo-membrane and patient otherwise improved.

13th. The father of the child reported at my office that his son was resting well, but that he complained of the same tired feeling, and that his throat was noticed that morning to be covered with the same white patches.

14th. Was sent for early in the morning to see the little boy. Reached his bedside at 11:30 A.M., and learned he had had the croup during the night. Examination showed loss of voice, stridulous expiration, and extreme recession of the chest walls. Fauces were covered by pseudo-membrane. He had two severe attacks of dyspnœa while I was examining him. I advised intubing the larynx. The parents consenting, a messenger was sent to town for instruments. At 2:30 P.M. they were brought, and Dr. Hitchcock accompanied the messenger. The doctor examined the patient and gave it as his opinion that we had a case of diphtheritic croup to deal with, and that it would prove fatal in a few hours unless relieved by intubation. We proceeded at once to introduce the tube, and succeeded without difficulty. Immediate relief was given, the child falling into a quiet sleep within five or ten minutes after he was lain down. We directed the mother to give enemata of beef-tea and whiskey, or milk and whiskey, every four hours, and ordered quiniæ and potass. chloras by mouth, with limited quantities of liquids. Cracked ice in limited quantities was allowed. 9:30 P.M. Child still breathing easily. The pulse was quite rapid, 140 per minute, temp. 101.5 and resp. 34. The hands and feet were inclined to be cold. Ordered whiskey in 10-drop doses every hour, that the child be bathed frequently with hot whiskey and water, and take tr. digitalis and tr. nux vomica in appropriate doses.

15th, 7 A.M. Child in better condition than last night. Hands and feet are warm. Respiration 30, temp. 100 and pulse 130. Considerable mucus and shreds of pseudo membrane are being coughed up. The alæ nasi expand and contract during respiration, and there is slight rising and falling of the trachea. Continued whiskey and enemata, discontinued digitalis and nux vomica, and ordered sol. pot. chloras in teaspoonful doses every two hours, and left gr. ij doses of Dover's powders to be given as needed to relieve restlessness. The child swallows readily, but coughs violently after each act, so we give as little as possible by the mouth.

16th, 3:30 A.M. During a violent paroxysm of coughing the child expelled the tube, with a considerable quantity of mucus and flakes of pseudo-membrane. I saw the patient at 6:30 A.M. The father stated that during the first two hours after the tube was expelled the child breathed without much effort, but that during the last hour he had encountered more difficulty, and that the difficulty was increasing. Now there is marked dyspnœa and occasional severe paroxysms. The tube was reinserted with the assistance of the attendants, and gave complete relief. Same treatment continued, with addition of quinia, grs. ij every two hours.

17th, 7 A.M. Patient showing signs of exhaustion. Continued same treatment and ordered more nourishment by mouth. Child swallows better when he drinks from the cup.

18th, 7 A.M. Patient better. Temp. 99, pulse 130, resp. 28, breathing easy. Concluded to remove the tube and attempted to do so with the assistance of the attendants, but made a complete failure. I made four attempts, each time seizing the tube, and each time the forceps slipping off. I ascribed my failure in part to the inefficiency of the assistants, as

the one holding the gag would allow it to slip out of the mouth. On this account my left index finger was fearfully bitten by the patient. Our patient being much exhausted by our efforts, he was put to bed and allowed to rest. Same treatment continued.

19th, 6 A.M. This morning, with the assistance of Dr. Hitchcock, the tube was easily and quickly removed. Our efforts produced but little exhaustion, and patient continued to breathe without effort after the removal of the tube. Ordered citrate of iron and quinine, also fld. ext. hyoscyamus to relieve restlessness. Owing to difficulty in swallowing, enemata were directed to be continued.

20th, 12 M. Patient breathes easily. Swallowing produces coughing: his strength is returning. From this time on the case pursues a favorable course, though the patient was not able to speak aloud for two weeks.

Case 4.—January 3, 1887, was called by Dr. Kilmer to see a case of membranous croup. The patient was a child 2 years and 3 months old. The croup was of six days' standing and had gradually developed. Now there is marked dyspnœa, considerable pallor, and rising and falling of trachea, all indicating the approaching fatal termination. We concluded to try intubation. It was accomplished easily and relieved the dyspnœa. Prescribed stimulants and inunction of quinine and lard, and directed the parents to give nourishment freely and allow the child a liberal quantity of cracked ice.

4th, 7 A.M. Patient seen by Dr. Kilmer, who kindly reported to me as follows: "The child breathes easily, though rapidly. There is slight expansion and contraction of the ala nasi during respiration. Temp. 99, pulse 140, and resp. 40 per minute. She swallows well without much cough. I feel hopeful of recovery, but there is a condition of exhaustion that is somewhat unfavorable." At 2 P.M. the doctor reported to me the patient died at 10:30 A.M., and that from the description given him by its father it probably died of exhaustion.

There are a few points I have observed in the five cases (one previously reported) of intubation of the larynx I consider worthy of note. One is the marked relief this means gave to the most distressing symptom, viz.: the labored breathing. So great has been this relief in all the cases that, if called upon so to do, I should use the tube in a child of mine if I could not hope for any greater benefit.

Another notable feature in the clinical history of all the cases except the first—and it may have been present in that case, as it was not under my observation—was the condition of exhaustion that appeared a few hours after the introduction of the tube. In both of the successful cases this condition very nearly proved fatal, and in the fourth case it is believed to have resulted in death. There are doubtless several factors operative in the production of this exhaustion; the disease itself is one tending toward exhaustion, after the introduction of the tube there is no further need of the powerful voluntary effort so long required to obtain sufficient air to sustain life, the patient rests easily, and, like the freezing man, is willing to sleep his life away. The partial withdrawal of nourishment on account of the difficulty the patient has in swallowing also has its influence in bringing about exhaustion.

Moderate doses of alcoholic stimulants, quinine, nutritious food, and gentle means calculated to arouse the flagging energies of the patient, were the means found most beneficial in this unfavorable condition. It is my firm belief, after having observed these few cases, that the recovery of the patient after intubation of the larynx will many times depend largely upon the skill exercised in the after-treatment.

Much has been written and said about the difficulties encountered in removing the tube. The writer has never experienced any such difficulty, except as mentioned in the history of case 3; indeed, he has invariably, except in this instance, found it much easier to remove the tube than to introduce it. He has never given an anæsthetic in either case, and never had any previous practice upon the cadaver. He does not believe either is essential to skilful and successful accomplishment of this surgical procedure. Any surgeon possessing a knowledge of the anatomy of the parts and a good degree of surgical skill, will be able to easily and quickly introduce the tube, and to remove it when the proper time arrives.

By a little experimenting at my office with the tube and forceps for its removal, I came to the conclusion that the difficulty in removing the tube in case 3 was due largely to the fact that the position of the tube was such that the long diameter of the opening in the upper extremity ran obliquely across the larynx instead of antero-posteriorly, as intended. Upon trial it will be found that as we ordinarily introduce the forceps into this opening the blades expand, if the tube is in normal position, in the direction of the long diameter, but if the tube is rotated, even slightly, it is not so; the blades of the forceps will not open in the direction of the long diameter of the opening in the tube, but obliquely across it. Now, if the blades of the forceps are opened and traction is made, one of two things will occur: either the tube will rotate so that the axis of the long diameter of the opening in the tube and the expanded blades of the forceps will correspond, or the blades of the forceps will slip out of the opening. The latter occurred to the writer four successive times in case 3. Having discovered the difficulty, the tube was the following day quickly removed by the following procedure, viz.: the forceps were introduced in the usual manner, and the closed blades inserted well into the opening in the tube, the handle of the forceps was carried slowly and gently from side to side. While thus describing an arc of a circle with the handle of the forceps, the blades were opened two or three times to determine, if possible, the direction of the long diameter of the opening. Very soon it became evident that when the handle was considerably to the right of the median line, the blades of the forceps, when expanded, seized the tube in the line of the long diameter of the opening, and then, with slight effort, the forceps and tube were withdrawn together.

One reading the description of this procedure will doubtless think it required so much time to execute

it that the child was in great danger of suffocating. It was not so, as only a few seconds were required to effect the end in view, the removal of the tube. Whether the tube was placed when inserted in the position he found it, or was properly placed and subsequently rotated, the writer is unable to say. It seemed to be a matter of little importance so far as the recovery of the patient was concerned, but was in the matter of its removal of considerable consequence. Should he in the future experience much difficulty in the removal of the tube, he will conclude it is in a mal-position and resort to the same procedure that was successful in the case related.

THE TREATMENT OF INSOMNIA BY FOOD, BATHS AND EXERCISE.

BY WM. G. EGGLESTON, M.A., M.D.,
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The first case of insomnia with which I had to deal, my own case, taught me the utter uselessness of depending solely upon hypnotics for the relief of this condition; and subsequent cases treated successfully by food, baths and exercise have shown that hypnotics are not only not to be depended upon, but that in many cases they are not required at all, and do more harm than good. I do not wish, however, to be understood as advocating the disuse of hypnotics in all cases of insomnia; my remarks must be taken to apply only, so far as my experience goes, to febrile insomnia, or the insomnia of convalescence from acute diseases, to the condition of sleeplessness arising from long hours of mental activity or excitement, and to insomnia from exhaustion. The two last may often be classed together.

In febrile insomnia there is a greater or less degree of cerebral excitement, which, when active, calls for an exhibition of bromides and chloral. In a still more active stage morphia may be indicated, especially if pain, such as headache or backache, be so pronounced as to demand attention; but as a rule, drugs which interfere with elimination should not be given. On this account paraldehyde is of very great value in some of these cases. In the eruptive fevers, when the cutaneous irritability is so great as to induce insomnia, sleep may be often produced by the use of warm or tepid baths. In many of these cases of febrile insomnia, I have noticed that the patient would often fall asleep soon after the administration of food, and more particularly if a bath was administered just before the food was given.

Wakefulness in these cases, and in many others, may be considered as the symptom of an irritable weakness of the brain or nerve centres. We know that in the latter stages of a protracted illness the condition of insomnia often depends upon the malnutrition of the patient, and that the indication is to furnish material which will delay or stop the processes of malassimilation or disassimilation. The failing power of the heart, due probably to the same irritable weakness of the nerve centres which causes the wakefulness, demands, as we all know, such diffusible nutriment as the system can assimilate with the least expenditure of force; and hence, we give milk and meat juices, sometimes alcohol, but rarely opiates. There is a tendency, I believe, to rely very much upon hypnotics in these cases, as in all cases of sleeplessness; and I believe this to be wrong. To say nothing of other objections to their frequent use, they disorder the stomach, and in the weakened condition of the patient his system soon falls into the habit of demanding these aids to artificial sleep. There is usually but little positive appetite, and bromides and opiates take away whatever there is.

But it is not alone in the cases of febrile insomnia that the nervous system is in a condition of irritable weakness. It is frequently seen, and I believe it to be the cause of a very large proportion, if not all of those cases of insomnia from intense mental activity or excitement, and of insomnia from exhaustion. Among hard working college students, newspaper men, accountants, and men whose lives are given up to literary pursuits, insomnia from exhaustion or excitement is not an uncommon affection; and it is common also in women who have been exhausted by protracted nursing of a sick child or friend, or who have been subjected to some unusual excitement. In dealing with this condition it is not sufficient to say that a complete change of habits must be made. In the majority of cases the patient cannot change his or her habits, and take a long vacation or a protracted voyage; and in the majority of cases this is not necessary.

I have noticed that most students, and women, who are troubled with insomnia are dyspeptic; and, in fact, I rather believe that a greater or less degree of dyspepsia or apepsia, and gastric irritability, will be found in all persons who are much troubled with insomnia. It must be very evident that a course of bromides or other hypnotics will not ameliorate the condition of the gastric or intestinal mucous membrane. It is quite clear also, that bromides will not permanently lessen the degree of nervous irritability which depends on the want of proper food. I have found it not only possible, but comparatively easy to treat cases of this kind without a single dose of any hypnotic, and without a change of or vacation from work. In some cases one or two doses of bromide of sodium or potassium, or paraldehyde has been necessary.

In cases of students and women who complain of insomnia, I have usually found that they take but little exercise, that they are constipated, have but little appetite, and suffer with gastric oppression after the main meal of the day, whether it be about midday or in the evening. They usually drink tea or coffee, sometimes immoderately. If the case has gone on for some time, there is an evident condition of anæmia. The first thing I do is to unload the bowels, and keep them open with cascara sagrada, though to begin with I usually order blue mass. The medicine ordered, as a tonic, is usually either nitro muriatic acid (equal quantities of nitric and hydrochloric acids and water), or tincture of the chloride of iron ℥ij, Fowler's solution ℥ij, and strychnine gr. j. Two to six drops after each meal (or

more), or else Fowler's solution alone. In the majority of my cases with students, I have used small doses of these drugs, and sometimes no medicine except the purgative. They are then instructed to eat before going to bed, having put aside every form of work at least half an hour before bed time. A formal menu cannot be made out for these cases; they should simply be instructed to eat, and if they are hungry they should eat whatever they want. A glass of milk and a biscuit or a piece of toast is sometimes all that can be taken at first; or a mashed potato buttered. In a short time the night appetite will grow, and the appetite will then need no particular directions. If possible the night meal should be taken in another room than the sleeping apartment, and for men in the city, it will be found advantageous to go out to a restaurant. The idea of going out for something to eat, and having to wait a short time for it will exite the appetite.

Before eating, however, a bath should be taken. I much prefer cold or cool baths, which should be given with a sponge or stiff brush, and the body thoroughly rubbed off with a coarse towel afterwards. The bath need not be more than five minutes in duration. The objection to the warm bath is that the patient is liable to take cold after it, and it is not so refreshing as a cool or cold bath. After the bathing and rubbing, or after eating, a moderate amount of exercise should be taken. For this a few minutes with Indian clubs or dumb bells is sufficient. Further than this, the patient should go to bed at the same hour every night, and arise at the same hour every morning.

I have seen a considerable number of cases of insomnia among night men on morning newspapers. These men usually take the evening meal about 6 o'clock, and then often work until 2 A.M. Within the past two years and a half, I have had more than twenty cases of this class, and I have not given a dose of medicine, other than a purgative, to a single one. These patients cannot conveniently stop to take a bath, and then go out to eat. They are instructed to go from the newspaper office to a restaurant, and eat what they want. Here we usually find that the appetite is good. After eating, anything from half a dozen oysters to a good steak, or as much, in fact, as one would eat for a hearty breakfast, they go home, bathe the face, head, neck and chest, take five minutes' exercise and go to bed. In each one of my cases of this class, the patient has reported that the treatment was a success from the first.

Since the age of 18 I have been more or less troubled by insomnia, and nothing has ever given such decided relief as a course of hearty meals just before going to bed. When the temporary insomnia has been relieved by this, I continue the sponge-baths and exercise before going to bed; but sleeplessness often returns after a sustained degree of mental labor and excitement, and is almost immediately relieved by a generally hearty meal before going to bed. At 19 years of age, while a student of medicine, I was dosed for this condition with every then known hypnotic, without any perceptible effect. Accidentally, I found that after eating late at night I slept well; and I now make it a rule never to go to bed hungry, and always to eat at night when I am in the midst of an unusual amount of work, or engaged in work of an unusually exciting character.

I have had to deal with only two cases of insomnia in old people. In both these cases they had been advised to take a "night cap" before going to bed. At first the remedy was efficacious, but in a short time it was found that the quantity of alcohol in the "night-cap" had to be increased, or it had no effect, and finally an excessive quantity of alcohol was demanded. I rapidly diminished the quantity of alcohol as the amount eaten was increased, until, with with the aid of a full supper and no alcohol whatever, the sleep was plentiful and much more refreshing than before. I do not know of anything which will more readily impair a digestive apparatus than alcohol on an empty stomach. Further than this, one runs the risk of inducing the alcohol habit by prescribing it in this way; and it must be acknowledged that the drowsiness induced by alcoholic drinks will not pass into a natural and calm sleep; and an artificial sleep is only demanded when a patient is positively ill. A cup of hot beef tea (made from some good extract of beef) taken just at bed time, will often be sufficient to cause a good natural sleep.

There is a popular superstition that grown people should not eat immediately before going to sleep; that it will give them indigestion or "night-mare," or both. I cannot see why adults are so very different in this respect from babies. We know that young children awaken at night and must have something to eat before they will sleep quietly; and some children actually fall asleep with a nursing bottle leaking into the mouth. It may be true that digestion is carried on slowly during sleep, and that the digestive function is less active; but here one need not be in a hurry for the completion of the operation. The average person should be in bed seven or eight hours, which is time enough for the digestion of almost anything edible. In our American city life I think that digestion carried on during sleep probably has the better chance for thoroughness.

65 Randolph St., September 2, 1886.

CASES OF POISONING FROM THE EATING OF DRIED BEEF.

BY R. HARVEY REED, M.D.,
OF MANSFIELD, OHIO.

On July 31 I was called to the family of Mr. James E., living at 92 East Market St., and found all the members of the family then at home, sick with a peculiar line of symptoms, of a similar character. I at once suspected a toxic agent of some kind, and on inquiry found my suspicions well grounded. The family consisted of Mr. E., aged 67, Miss E., aged 21, James E., aged 16, and Mrs. E. (age unknown); the last being away from home at that time was not taken ill. Upon further inquiry I found they had all been in their usual health the day before (July 30), on the afternoon of which day they had bought some chipped beef, and all had eaten freely of it for supper.

Miss E., a rather delicate young lady, was taken violently ill about 8:30 o'clock on the same evening, first vomiting the contents of the stomach, after which the emesis still continued throughout the night, the patient throwing up a greenish, frothy mucoid substance, which came up in great quantities. She had marked thirst, with constriction of the fauces and great prostration. Shortly after the vomiting commenced the bowels began discharging, and would move every time she vomited; the discharges consisting of a brownish liquid substance. This was associated with more or less griping.

A homœopath had been consulted in the evening, but considered it a case of cholera morbus and treated it accordingly. The patient not improving as desired, sent for me the next morning, at which time I elicited the above history, and found the patient with a fiery red tongue, a bitter taste in the mouth, vertigo, twitching of the muscles, cold extremities, no fever, and with a pulse of 120, and very much prostrated. With others of the same family suffering in a similar manner, and the associated history, I was led to the legitimate conclusion that it was the result of eating poisonous beef.

James E., Jr., had eaten of the beef on the evening of July 30, but being a very strong, healthy young lad, was not taken sick until after breakfast the next morning, at which time he ate still more freely of the same dried beef. In about an hour and a half he was taken with severe vomiting, which continued for several hours, but was not followed with any considerable diarrhœal discharge, although the bowels were moved quite freely. He complained of a bitter taste in the mouth, with a deathly sickness and weakness, and vomited a peculiar mucoid substance, after discharging the food contained in the stomach; his pulse was 88, and not associated with fever.

James E., Sr., ate but little of the beef for supper, but said he had had a bad taste in his mouth all night. He was not taken sick until after breakfast, at which time he ate of the beef more freely, and in about an hour and a half was taken violently sick; first with purging, which was soon followed by violent vomiting, first of the contents of the stomach, and then of a greenish frothy mucoid substance which was very tenacious, and would string out from his mouth to the floor like white of egg; the tongue was fiery red and covered with slime. He said he had a peculiar sickening sweetish taste in the mouth, and was very dizzy. He had aphonia, twitching of the muscles, some trouble with the vision, but not marked, at times complete loss of consciousness, and at one time was for several seconds in a spasm. He had great difficulty in urinating, the urine being scanty and high colored; pulse 80 and weak, no fever; extremities cold, and the surface of the body covered with a cold sweat, with general exhaustion and depression Specimens of the urine were secured from all the patients suspected of beef poisoning, and carefully examined, chemically and microscopically, showing the following results:

Miss E.: Color, light straw; reaction neutral; sp. gr. 1022. A trace of sugar was found, but no albumin. Earthy phosphates not materially increased.

James E., Jr.: Color, very light brown; reaction acid; sp. gr. 1020. No albumin and no sugar, and but few earthy phosphates or deposits of any kind.

James E., Sr.: Color, a dirty yellow; reaction acid; sp. gr. 1028. No albumin and no sugar, but large quantities of earthy phosphates, and the chlorides.

The general outline of treatment consisted in the use of opium and bismuth, together with lime-water and milk, with stimulants and diuretics, followed with tonics and pepsin; while locally were applied heat and stimulating lotions, together with brisk rubbing.

The young man soon recovered, and in a few days felt as well as ever. The young lady was several days in making a recovery, and did not get over the effects for almost a fortnight. Mr. E., Sr., did not entirely recover from the effects of the poison for more than two weeks. They were all troubled more or less with indigestion and constipation for some time after they had recovered from the primary effects of the poisonous ptomaines.

Specimens of the meat were procured, and through the kindness of Dr. J. U. Barnhill, of Columbus, O., sent to Prof. David O'Brine, of the Ohio State University, for a chemical analysis, who subsequently reported finding the ptomaines. His full report is herewith given:

"No. 341. Chemical Laboratory of the Ohio State University. Quantitative analysis of —— beef from Dr. Reed, Mansfield, Ohio. Determination of —— ptomaines or cadaveric alkaloids. Method of analysis—described by Selmi.

"Found ptomaines and confirmed by tests=H_2SO_4—I_2O_5Cu $(C_2H_3O_2)_2$ H_3PO_4.

"The substance was nicely shown under the microscope. The method of analysis is described in 'Blyth on Poisons,' pp. 461–468."

Dr. Barnhill also sent some of the meat to Dr. Leech, of Columbus, for microscopical examination, besides making a careful microscopical examination of the meat himself, which revealed in both instances degeneration of the muscular fibres, with myriads of micrococci.

On August 5, 1886, I was called to visit Mrs. John M. and son Claude, the former aged 42 and the latter 17. They had bought and eaten a lot of dried beef, and in the course of an hour or more were taken violently sick.

Mrs. M. was taken with vomiting and purging; the matters vomited were, after the contents of the stomach were discharged, of a viscid, ropy character. She complained of a nauseous, sweetish taste in the mouth, twitching of the muscles, was badly nauseated, had cold extremities, with vertigo; the tongue was very red, with pulse 120, but no fever.

Claude M. was taken ill very shortly after eating the dried beef, with vomiting and purging, and vomited large quantities of a ropy mucoid substance; had a bad taste in his mouth, cold extremities, tongue red, pulse 100, but no fever.

The treatment in these cases was the same as in the others, with the exception of using small doses of calomel instead of bismuth, on the principal of it being an antiseptic.

I considered both of these cases the result of eating poisonous dried beef; although not quite so severe as the cases of the Ewing family. The young man soon recovered and in a day or so was all right; but Mrs. M. was several days regaining her health, and in fact is still (at the writing of this report) troubled more or less with gastro intestinal irritation.

I regret very much my inability to procure specimens of this meat.

Remarks.—That the ptomaines or cadaveric alkaloids were the cause of the illness in the above cases is without a question in the case of the Ewing family, and scarcely without a doubt in the last two cases. That there is a poisonous alkaloid which is liable to form in meat, under certain circumstances, has been established without a doubt; but the question of chief importance to the public in general is, when, and under what circumstances, these poisonous ptomaines may and do form, and how to prevent their formation.

When it is remembered that these poisonous alkaloids were first discovered by Selmi in exhumed corpses, the key to the mystery is at our command; chemistry has unlocked the door that led to their once mysterious approach, and has shown their presence to be synchronous with the decomposition of meat of any kind. This being the fact, all tainted meat, from whatever source, should be strenuously avoided; the "shop soured" meat that has spent days on the counter, or in the ice chest, should be shunned, even when cooked and canned, or when made into bologna sausage, or pudding meat, or salted or dried; for it must be remembered that no amount of cooking or curing will remove these poisonous ptomaines from meat in which they have once formed. They are not like the trichina spiralis, or the cysticercus, which can easily be destroyed by thorough cooking.

The commercial process of canning meat in our large cities or packing houses, is another source of these ptomaines; the rapid and slip-shod methods resorted to by the most of these houses, by which meat is turned out upon the market in a few days as cured (but which, in reality, has not been cured sufficiently to prevent its decomposition, and as a result the formation of these poisonous alkaloids), should not only be shunned, but these "near cut" and imperfect methods of curing condemned; and no process of curing and packing meat should be permitted that does not insure the most perfect preserving of the same; and no meat should be put through any preservative process of any kind that is not perfectly healthy, "sweet meat" to begin with, that is not absolutely free from any taint or decomposition.

The detestable habit of working up beeves that have been killed by railway accidents, and have not been bled or dressed for days after being killed, and the wholesale slaughter of "bony old cows" and "unborn calves" and placing them on the market for food, is a disgrace to any country.

MEASUREMENTS FROM SKULLS OF THE SEVENTH CENTURY.

BY C. F. DIGHT, M.D.,

PROFESSOR OF ANATOMY AND PHYSIOLOGY IN THE AMERICAN MEDICAL COLLEGE IN BEIRUT, SYRIA.

During a recent visit to Jerusalem, Palestine, I had an opportunity to examine and take the measurements of a large and rare collection of human skulls, which are stored away in the old monastery of Mar Saba, a distance of three hours' horseback ride down the Kedron Valley, midway between Jerusalem and the Dead Sea. The results of this examination are such as are believed to be of interest, and for this reason I am led to publish them.

These skulls are said to be those of the early Christian monks, who in the fifth and sixth centuries lived in great numbers along this Kedron Valley, as far down as the Dead Sea, and also in and about Jerusalem, who in 614 were massacred by the Persians, when they invaded Syria and Palestine under their leader Chosroes. They are, therefore, Caucasian skulls, and probably those of the ancient Greeks and Romans, which were gathered up and stored here to the number (they say) of 10,000. Such being the size and antiquity of this collection, it can hardly fail of being a valuable one. The great traveler and writer, H. B. Tristram, once on looking at it said: "It is certainly a collection the Anthropological Society might envy, and out of which they might select as many types as it suited their fancy to create."

The measurements which I will give are the only ones, so far as I have been able to ascertain, that have ever been taken of any of these skulls. Omitting as far as possible anatomical terms, the five measurements which I took are as follows:

1. The *horizontal circumference;* learned by measuring with a tape the distance from the middle of the lower part of the forehead around the largest part of the occiput to the starting-point.

2. The *naso-occipital length*, or the distance from just above the root of the nose, back over the top of the head to the external occipital protuberance.

3. *The height*, or the vertical distance from the opening of the ear to the level of the centre of the top of the head.

4. The *width*, or the greatest distance through the head from side to side above the level of the cheek bones.

5. The *cranial capacity*, learned by closing the little openings at the base of the skull, then filling its interior with mustard seeds, which are then poured out and measured in a graduated vessel.

Of the ninety-one skulls which I measured, the largest one gave a horizontal circumference of 22.45 inches (570 millimetres), which is ¾ of an inch above the average for all races. This same skull gave a cranial capacity of 113.6 cubic inches, which is 28.6 cubic inches greater than the average for all races, and 18.1 greater than the average for the Caucasian race (whose cranial capacity exceeds all other races), and but 4.4 cubic inches less than the capacity of Cuvier's skull—the largest on record. Its width was also the greatest, being 6.38 inches (162 mm.).

Its naso occipital length, 13.39 inches (340 mm.), was reached by but one other, and its height was 4.72 inches (120 mm.).

The smallest of the ninety-one skulls gave the smallest horizontal circumference 18.91 inches (480 mm), and a cranial capacity of 76.6 cubic inches, which is 18.9 cu. in. less than the average Caucasian capacity. Its height was the lowest, being 3.97 inches (101 mm.), its width 5.27 inches (134 mm.), and its naso-occipital length 11.42 inches (290 mm.). All the portions of this brain had been very small.

The one giving the greatest height, 5.2 inches (132 mm.), gave a horizontal circumference of 20.68 inches (525 mm.), width 5.63 inches (143 mm.), and naso-occipital length of 11.85 inches (301 mm.).

The one giving the least width, 4.72 inches (120 mm.), gave a horizontal circumference of 20.48 inches (520 mm.), a naso-occipital length of 12.21 inches (310 mm.), and height of 4.45 inches (113 mm.), being narrow and low, but long from before backwards.

The one giving the shortest naso-occipital length, 8.94 inches (227 mm.), gave a horizontal circumference of 19.7 inches (500 mm.), height 4.37 inches (111 mm.), and width of 4.92 inches (125 mm.).

The average measurements of the ninety-one skulls are found to be as follows:

Average horizontal circum.....	19.98 in.	(507.2 mm.).
" height	4.51 in.	(114.5 mm.).
" width.....	5.57 in.	(141.4 mm.).
" naso-occipital length.....	11.84 in.	(300.6 mm.).

The average cranial capacity of the nineteen whose capacities were measured was 91.8 cubic inches.

Comparing the average measurements of these skulls with the *present* average measurements of skulls of the same race (the Caucasian), and if the above measurements are taken as the average of the race at that time (and persons of their rank at that time should have skulls above rather than below the average), it follows:

1. That ours, the Caucasian skull, has, during the past thirteen or fourteen centuries, increased in horizontal circumference 1.72 inches, and to a less extent in height, and not at all in width, and has gained in cranial capacity 3.7 cubic inches.

2. From the fact that our skulls have not gained in width, it follows that this gain in capacity of 3.7 cu. in. is due to increase in their height and length, which, bearing in mind the plan of development of the brain, implies an increase in size of the upper and the anterior parts of the brain—the exact parts which, on *a priori* grounds, we should expect to increase by education and civilization, since these parts of the brain specially preside over the moral and intellectual functions.

3. The lower portions of the brain, being the parts which specially preside over the selfish propensities, or the so-called inferior functions, and which give breadth to the head, being called into activity less as education and civilization advance, have failed to grow as rapidly as other and more exercised portions of the brain; hence the non-increase in width of our skulls.

It need scarcely be said that these were adult skulls, and probably all males, and that among this large collection numerous abnormalities and peculiarities exist—such as absorption and perforation of both tables of the skull from growth and pressure of the Pacchionian bodies; non union of the two halves of the frontal bone in the usual way, leaving a persistent frontal suture; marked difference in size of the two halves of the skull, the left half usually being the larger; and Wormian bones in different localities. A few presented spots which appear sometime to have been burned, and the knife shows these places to be charred. Many of them yet contain a considerable number of teeth, which were sound at death, but are now brittle because of their great age. Others present fractures at different places, and those which are broken open show internal depressions at points corresponding to external elevations, and *vice versâ*, showing that the inside of the skull corresponds in shape to the outside, and that, consequently, the shape of the brain may, as a rule, be determined by the shape of the head, as certainly as the shape of a tree may be known by the shape of the bark which covers it.

POISONOUS ARSENICAL WALL-PAPERS.

Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, January 12, 1887.

BY JAMES R. CHADWICK, M.D.,
OF BOSTON, MASS.

In the presence of so many chemical experts and learned general practitioners, it would be presumptuous in me to treat this subject systematically or exhaustively. Moreover, my purpose in opening this discussion is to present, by fresh instances, to the public and profession, the dangers to which every citizen of this commonwealth is exposed by the manufacture and sale of papers for our walls, so charged with arsenic as to produce characteristic symptoms of the poisoning by that mineral in the persons occupying the rooms thus papered. The Legislature of this State, last winter failed to pass a bill prohibiting the use of arsenic in the coloring of wall-papers, so that the only means by which we can save ourselves from this poison, is to disseminate so full an appreciation of our danger throughout the community as to cause every individual to protect himself and his family. This end can only be attained by the publication, by every one who has suffered, of the exact circumstances attending his experience, together with the names of the dealers retailing the papers and the chemists who have analyzed them. This I shall aim to do without animosity to any individual, but with the single purpose of making every one feel more keenly than they now appear to do, the responsibility for the lives and health of our wives, our children, and our families.

In September, 1885, Messrs. J. F. Bumstead & Co. put upon my nursery and one sleeping-room new papers, which they assured me had been analyzed and pronounced free from arsenic. In the nursery slept a boy of 4 years and a nurse, in the chamber slept a girl of 13, in a third room, not then

re-papered, slept two other children. All the children passed several hours of every day in the nursery. During the winter of 1885–86, the boy and nurse remained in good health, the girl of 14, however, suffered much, for the first time in her life, from dyspepsia, colicky pains and headaches; the younger of the two girls had many attacks of palpitation of the heart, lost color and strength; the other girl kept in good health. The symptoms in the two affected girls yielded somewhat, but never fully, to treatment. During the summer of 1886 they regained their health and strength at Mt. Desert; within a month of their return to their homes many of the old symptoms reappeared. About the first of December, the attacks of colicky pains became more severe and frequent in the two affected girls, and were attended by vomiting and diarrhœa.

My attention was then aroused, and I set about to discover a common cause for all these similar symptoms. Having suffered severely in past years from the poisoning of my family by arsenic, I naturally thought of that possibility, and sent samples of the papers most recently put upon the walls (nursery and small chamber) to Professor E. S. Wood for analysis, and received the following reply:

"BOSTON, December 10, 1886.

"The enclosed paper (from the nursery) is very arsenical, I should advise its removal. The other was all right, non-arsenical.

EDWARD S. WOOD."

I was naturally in a state of great indignation that, despite my care, I should have put upon the wall of my nursery a paper which contained a dangerous amount of arsenic. I wrote at once to J. F. Bumstead & Co., asking the name of the chemist who had made the analysis for them. The reply was as follows:

"BOSTON, December 13, 1886.

"DR. JAMES R. CHADWICK:

Dear Sir:—The paper about which you enquire was analyzed by Professor S. P. Sharples, and by him pronounced 'free from arsenic.' Yours truly,

J. F. BUMSTEAD & CO., *per* HENRY."

It happened that a week previous to this correspondence my wife had taken a friend to the store of J. F. Bumstead & Co., where he had purchased several hundred dollars' worth of papers for a newly-erected house in California. On the same evening I questioned my wife closely as to whether she had been careful to select only papers that were free from arsenic. She said she had insisted upon that point with Mr. Bumstead himself, and had been told that only those papers would be shown her which had been analyzed and pronounced to be free from arsenic. I asked if she had inquired who their chemist was, to which she replied that Mr. Bumstead had told her that their chemist was a Professor Hills. As I knew that this could only be Professor Wm. B. Hills, of the Harvard Medical School, I felt assured that the papers were safe. A week later, however, on discovering that my own paper was arsenical, and feeling responsible for my friend in California, I went to the store of Bumstead & Co., and demanded to see the reports of Professor Hills upon the seventeen papers selected by my friend. I was told to call the next day when they would be shown me. I did so, and then found that all the papers had been, (owing to a misunderstanding) sent to Professor Hills for analysis since my visit the previous day. One of them had been pronounced by him to contain "considerable arsenic," and another a "small amount," both being regarded as more or less dangerous to health. The others were all practically free from arsenic. On asking upon whose certificates the two first mentioned papers had been supplied as "free from arsenic," I was shown the certificates of Prof. S. P. Sharples.

In order to confirm the presence of arsenic in dangerous amount in the three papers about which the reports were conflicting, I have since had each of them analyzed independently by Professor E. S. Wood, Professor W. B. Hills, and Dr. Chas. Harrington, all of the Harvard Medical School, with the result of perfect concurrence as to finding arsenic in dangerous amount.

But little comment is needed on this recital of facts. It is, however, but just to Mr. Bumstead to say that I fully exonerate him from any intent to mislead my wife with regard to the analyst of the papers supplied to my friend. His statement that Professor Hills is now his analyst is true, yet I think I am right in pointing out to him that his reply was so framed as to be misleading, because the papers he was offering for sale had many of them, as is manifest, been analyzed in previous years by other chemists.

I may say, in conclusion, that it makes no difference whether the symptoms manifested by two of my children be adjudged by those present as due to arsenic or not; if I demand papers free from arsenic I ought to be able to obtain them. My own belief is that the symptoms are attributable to that cause, and that the exemption of the nurse and two other children, though in two instances more constantly exposed to the influence, was attributable to the fact that they were less susceptible to the poisonous effects of arsenic. I pass around samples of the papers with the arsenical mirrors obtained by the Berzelius-Marsh test.

I should add that the two affected children have had no symptoms since the paper in my nursery was removed a month ago.

MEDICAL PROGRESS.

HYDRIODATE OF HYOSCINE is recommended by DR. J. MITCHELL BRUCE as being the most convenient salt of the alkaloid for use as a cerebral sedative (*Practitioner*, pp. 321–333). He finds that it is best administered by subcutaneous injection in doses of $\frac{1}{200}$ of a grain. Although it is usually only necessary to give one dose in the evening to secure a quiet night, in cases of high delirium it has been repeated within four or six hours with advantage and safety. If given by the mouth, larger doses are required, as much as $\frac{1}{120}$ to $\frac{1}{30}$, or even $\frac{1}{50}$ of a grain given at bedtime, having proved satisfactory in the hands of Dr. Wetherill, Jr. In America, $\frac{1}{100}$ of a grain has been fixed upon as the average working dose. Mr.

Freeman and Mr Hardy, of Charing Hospital, have, however, come to the conclusion that $\frac{1}{200}$ of a grain of the hydriodate produces most of the benefit that may be expected, without any risk of unpleasant effects. Dr. Bruce confirms the results obtained by previous investigators as to the little value of hyoscine as an anti-hidrotic. On the contrary it frequently produces a distinct increase of perspiration. It does not produce unpleasant dryness of the skin and the throat like atropine. The province of the application of hyoscine is defined by Dr. Bruce to be in combatting urgent symptoms in cases of delirium and to procure quiet and sleep. It must not be expected to cure any disease, although it is true that cases have occurred in which symptoms once controlled by hyoscine have not returned. Sometimes hyoscine gives rise to unpleasant symptoms in connection with the circulation and respiration. Within half an hour after the administration of a full dose ($\frac{1}{100}$ to $\frac{1}{75}$ hypodermically) it may cause failure of respiration in the form of shallow breathing, or even Cheyne-Stokes' rhythm. It has been found, however, by Dr. G. W. Mann, that chloral can neutralize the effects produced by hyoscine. A lady who had taken $\frac{1}{30}$ of a grain of hydrochlorate of hyoscine by mistake, was seized with convulsions, loss of speech, illusions and hallucinations. Chloral in 10 grain doses was given every quarter of an hour until the convulsions had disappeared which took place in less than an hour from the commencement of the treatment. It was then continued in the same dose every hour, but after 90 grains in all had been given, there was no further necessity for its use.—*Provincial Medical Journal*, Jan. 1, 1887.

RARE CASE OF EPILEPSY.—At the meeting of the Medical Society of London, on November 15, 1886, DR. HUGHLINGS JACKSON related the case of a boy, 7 years of age, in whom Epileptic Fts were artificially induced by an unexpected touch on the head. When 3 days old the boy had a convulsion. At the age of 2½ years he had an "ordinary" epileptic fit. Of these latter fits he had four attacks of the same kind, or rather *degree*. Ever since the first so called ordinary epileptic fit some imperfect use of the left arm and leg was noticed, and has ever since remained. About the age of 2½ years the boy began to fall down, but these falls were really fits. He never "fell" unless the head or face were touched, but the fit would not occur if he knew he was going to be touched. Stoppage of respiration was very evident in the fit. The eyes were turned to one side, generally the right. Sometimes as many as fifty falls occurred in one day, and never a day passed without some. Touching any part of the head or face was effective. Several appeared also during sleep when he accidently touched his face or head. These sudden inopportune falls had caused enlargement of the left frontal eminence, and also that of the right side. The left arm was slightly less in circumference, and its movements were clumsy; there was something like athetosis in the left hand when the right hand was engaged in drawing or writing. He limped with the left leg, which was also less in circumference than the right. There was no alteration in the knee-jerks, and no ankle clonus. Perhaps the left side of the head was more sensitive, but no one place could be made out to be more sensitive than another. At times the boy said his left arm felt "heavy." The fits were not opisthotonic, as happened in feigned fits. Dr. Jackson described three forms of epilepsy —(1) epilepsy proper; (2) epileptiform seizures; (3) due to nervous discharges in the pons Varolii or medulla oblongata. In the case above there was a local lesion somewhere, as the hemiplegia showed. The epileptogenous zone was less defined than occurred in Brown-Séquard's guinea-pigs. Nervous discharge in some part of the pons was the probable cause of the falls or fits.—*Lancet*, Nov. 20, 1886.

PELLETIERINE IN INFANTILE DISORDERS.—M. F. MÉPLAIN, bearing in mind the difficulty of giving children vermifuge medicine in sufficient doses, and the fact that Dr. Bétancés had administered 6 centigrammes of pelletierine, which had expelled a tænia, resolved to try this remedy on an infant 32 months old, which was suffering from convulsions. M. Béranger Féraud and other writers recommend that pelletierine should not be given to children, on account of the symptoms of congestion of the brain, which it occasionally causes in adults. Be that as it may, M. F. Méplain administered to his little patient a large teaspoonful of solution of Tanret's pelletierine, which represents about 6 centigrammes of the alkaloid; twenty minutes later, 20 grammes of manna, dissolved in a cup of milk, were given. The expulsion was tardy, owing to the insufficiency of the purgatives used, but was, nevertheless, complete. M. F. Méplain, who remained several hours with the patient, observed no alarming symptom. From the observations of MM. Bétancés and F. Méplain, it appears, therefore, that whilst a small dose of pelletierine is sufficient to expel the tænia, the use of the drug is, in the case of children, unattended with the risks which might have been expected from its physiological action, and from the effects observed in adults.—*British Medical Journal*, Jan. 1, 1887.

DENTAL ANÆSTHESIA.—M. GEORGES VIAN claims to have solved the problem of local anæsthesia in dentistry. After numerous trials of solutions of different strengths, he has found that the soft parts about the maxillæ may be rendered completely insensible by the use of cocaine, associated with a 2 per cent. solution of carbolic acid. Five minutes before operating M. Vian dissolves 5 centigrammes (1 grain) of hydrochlorate of cocaine in 50 centigrammes (10 drops) of the solution, and injects it into the gums, half-way between the neck and the extremity of the root of the tooth. Half of the solution is injected on the palatine and the remainder on the labial side, pressure being made by the finger, when the needle is withdrawn, to prevent the exit of the fluid. Anæsthesia is perfect in three minutes. The quantity of cocaine advised by M. Vian seems somewhat large, but it is said to have been so used in eighty seven cases without causing any unpleasant symptoms.—*Medical Record*, Jan. 15, 1887.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

The Editor of this Journal would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, FEBRUARY 19, 1887.

THE MARINE HOSPITAL SERVICE.

There is much of general medical interest in the recently received "Report of the Supervising Surgeon-General of the Marine Hospital Service of the United States for the Fiscal Year 1886." There are many medical men and health officers who do not seem to have yet seen the necessity or good of this Service—and this, we think, may be attributed to a want of information as to the duties required of and performed by the Service.

During the last fiscal year the number of patients relieved by the Service was 43,822; number treated in hospitals 12,624; number treated in dispensaries 31,198; and days' relief in hospital furnished 316,205. Previous to October, 1885, the Service was supported by a tax upon the beneficiaries, and it was held that only those who contributed to the fund could receive relief from it; but after the enactment of the law providing for the support of the Service from the tonnage tax, it was claimed that fishermen, whose vessels paid tonnage tax, became contributors to the fund; and it was decided by the Solicitor of the Treasury that seamen employed on vessels licensed for the fisheries are entitled to the benefit of the Service. By a calculation based on the receipts from all sources (including special appropriations) it will be found that the average cost of each patient relieved during the year, supposing that all the funds were expended, was a trifle over $12. Even at the present low rate of tonnage tax, the tax alone is sufficient to support the necessary *general* expenses of the Service with the exception of the amount necessary for fuel, light and water. Of course special appropriations are required from time to time for extraordinary alterations and repairs for the older hospitals. In the long-run the expenses would probably be reduced if the recommendation of General Hamilton regarding a laboratory and warehouse were carried out; for it would undoubtedly be cheaper to manufacture many of the drugs now in use than to buy them; and with ample store-room articles which cannot now be kept in stock could be purchased at better rates, and be subject to more thorough inspection. Certainly, all non-perishable articles needed for use in the hospitals should be kept in stock.

Of the hospitals, the one at Baltimore will probably be occupied this winter; the one at Boston is in bad repair, especially with regard to the heating apparatus; and the one at Chicago is probably in a worse condition. The hospital at Detroit is too small, and that this is a very important station was shown during the small-pox epidemic in Montreal little more than a year ago. The hospitals at Key West and New Orleans, each a very important station, are sadly in need of repairs. The Government does not own a hospital at New York, but the necessity for one is without question. An appropriation of $250,000 has been asked for to enable the Secretary of the Treasury to purchase a site and erect a suitable hospital, (and we have gained the impression in some way that the site has been purchased). The hospital at Wilmington, N. C., is also too small, and during the last year it was so crowded that the attendants had to be lodged in the cupola. It is recommended that quarters for the medical officers be constructed outside of the building. The other hospitals are generally, with the exception of minor repairs needed, in good condition.

Although there were no epidemic diseases imported into the United States during the last fiscal year, the country was threatened from various sources, especially from cholera in Europe and small-pox in Canada. Against the introduction of these diseases the Service did some very efficient work, as will be seen from the "Report." General Hamilton says, and it is a matter which has long been discussed, and needs still further ventilation, that a more stringent law should be made regarding hospital and other accommodations of the steerage on merchant passenger ships. The berth decks are badly ventilated, and in many cases there is an absence of light. These ships also need better medical attendance, and laws should be made which will give the medical officers some voice in matters relating to their position and duties. At present the medical officers are not subjected to examinations as

to qualifications, and in some cases they have to perform the duties of *purser* in addition to those of the medical attendant. "That portion of the quarantine act requiring the publication of weekly abstracts of sanitary reports, etc., has not been carried into effect of late years, the force of this office being inadequate for the performance of the duty. The detail of an additional officer to act as registrar of vital statistics would fulfil the requirements, at a minimum expense. These reports are very much sought after by State and local boards of health, and were the publications resumed it would be of great service to them." Since this was written these abstracts have appeared with an irregular regularity.

Hitherto the annual reports have mentioned the necessity for providing for old, decrepit, and worn-out seamen, and those suffering from incurable affections. This would prevent the over-crowding of the hospitals to some extent, and concentrate these seamen in one place, where they could be better cared for. It is recommended that a "National Snug Harbor" be established in the District of Columbia, which would also serve as the headquarters of the Service, and of the purveying division, laboratory, etc. The approximate cost of this establishment would be $155.000.

THE INDUCTION BALANCE AND TELEPHONIC PROBE.

At a recent meeting of the New York Academy of Medicine DR. JOHN H. GIRDNER gave an interesting demonstration of the detection and locating of metallic masses imbedded in the human body, by means of the *induction balance* and the *telephonic probe*. As is well known, this apparatus is the invention of Professor Alexander Graham Bell, of Washington, and the method was suggested in the summer of 1881, in connection with the case of the late President Garfield. It will be remembered that an attempt was then made to locate the ball in the President's body by means of the induction balance; but on account of the crudity of the apparatus, the lack of experience in its use, and, more than all, to the disturbing influence of a large steel mattrass on which the patient lay—the existence of which was unknown at the time of the attempt—the result was anything but satisfactory.

In working the apparatus a bichromate of potassium battery of six cells is employed; and an interrupted current with about six hundred interruptions to the minute has been found to be most satisfactory. For the induction balance two circles of electric influence are required: one, the primary, directly connected with the battery; and the other, the secondary or induced, with a telephonic receiver. In each there are two coils of No. 25 wire, one of which is twice the size of the other; the larger coils being designated as "exploring coils," and the smaller as "adjusting coils." The former, which are simply laid one upon the other, are secured to a large disc of wood, provided with a handle, which is called the "explorer," and which is to be moved over the surface of the body in the locality where the metallic mass is supposed to be lodged, while the "receiver" of the instrument is held to the ear of the operator.

When no metallic body is in the vicinity of the "explorer" no sound whatever is heard through the "receiver;" but when the "explorer" is brought near any metallic mass the presence of the latter is indicated by the sound heard in the "receiver." This sound increased in intensity as the "explorer" approaches nearer and nearer the mass, and the greatest intensity of sound is, of course, reached when the centre of the "explorer" is at the nearest possible point to the metallic mass. Fortunately for the successful application of the apparatus, experiment has shown that living tissue is the best conductor of the sound.

In the telephonic probe a telephonic receiver is brought into connection with an ordinary piece of steel upon the external surface of the body, and also with a long needle which is to be inserted into the flesh at the point indicated by the explorer of the induction balance, as that at which the sound in the telephonic receiver of the latter is most distinct. As soon as the point of the needle comes in contact with the metallic mass a sharp "click" is heard in the receiver; and the special value of the telephonic probe lies in the fact that this "click" is never heard when the needle comes in contact with bone or other non-metallic substance. At the meeting at which the instrument was described and exhibited, its practical working was shown by the detection of the location of a mass of lead in a piece of beef. It was also shown to some extent by the detection of the location of a ball in the chest of a gentleman who was wounded in the late war; but the gentleman respectfully, though firmly, refused to allow the telephonic probe to be used. The induction balance showed that the bullet was about the junction of the clavicle with the sternum. It seems, however, that the practical working of the instrument might be easily demonstrated beyond doubt by experiments upon anæsthetized dogs by shooting them and then locating and extracting the bullet.

THE LIGHTING AND HEATING OF RAILWAY CARS.

The recent disaster on the Vermont Central Railway, and others which have but lately occurred on other roads, seem sufficient ground for again calling attention to the dangerous methods of heating and lighting of railway passenger cars, especially since of the 300 lives already lost in railway accidents in this country this year about one-half have been caused by fires originating from the stoves and kerosene lamps with which the cars are heated and lighted. In a few States the State Boards of Health have undertaken systematic sanitary inspection of passenger cars, and it would be well if the Boards would set this matter before the legislatures in the strongest possible light; since it is clearly within the province of a State Board of Health to take cognizance of such matters—certainly as much as the disinfection of closets, water supply, means for rescuing passengers from wrecks, etc. In Dakota a bill has been presented to the legislature, and we are informed that it will most probably pass, which declares that a fire in a railway car is a "culpable negligence," and renders the road liable to the survivors of the person burned in the sum of $10,000 damages; and in the Illinois Legislature two bills have been introduced—the one requiring railway companies to use some other method than stoves for heating cars, and the other providing that a chemical fire-extinguisher shall be kept at each end of the car, or, in lieu of them, three hand fire-extinguishers.

It has been shown on the Connecticut River Valley Railway and on the elevated roads in New York City, that cars may be efficiently and satisfactorily heated by steam, without fire of any kind in the cars, and without danger to the passengers by breakage or disconnection. On the elevated roads in New York each car contains pipes in which is a quantity of soda solution, which is heated by steam from the engine; this solution being used because it stores more heat than any other available solution.

In the matter of lighting cars, it is now practicable to use the incandescent electric light, which is in partial use on the Pennsylvania Railway and on some of the cars of the Boston and Albany Road. Even gas, which has been used for several years on some of the roads, is much more safe than kerosene lamps. There may be said to be no danger whatever from the incandescent light, for any accident which breaks the glass bulbs at once extinguishes the light.

It is also within the province of the supervisors of public health to recommend that wooden bridges shall be superseded by iron bridges with a guard-rail (such as is in use on the New York elevated railways)—a high rail on the outside of the track-rail on each side, which prevents cars leaving the track even if derailed.

A CLASSICAL PATIENT.

The following message (?) was left on the slate of a Boston physician:

οἱ ἀναγκαῖοι ἐμὲ χρήζουσιν οἶσθε εἶναι.

The physician, in writing to the *Boston Medical and Surgical Journal*, claims that his inability to translate the line "shows the necessity of requiring Greek" (in the colleges). To us it only shows that the patient should have been taught to express his wants in English.

Doubtless one or two dozen translations of the line (no two alike) have been sent in by lovers of the classics residing even under the shadows of Harvard and the Bunker Hill monument. It is, then, perhaps too late for us to venture a translation, and it would be presumption extraordinary for those who do not see the necessity of requiring Greek, and who are somewhat out towards the periphery of the universe, to do more than offer a diagnosis of the patient's malady. If the patient cannot write English it is scarcely probable that his tongue has no mastery of the words immortalized by Dr. Noah Webster, not to mention other lexicographers. We may therefore imagine the dismay and confusion of face of our enquiring *confrère* when the patient returns, finds him in his office, and begins to describe his symptoms in the native tongue of Aristotle, which has been more recently brought prominently before the public by Prof. Anthony and Mr. Charles Francis Adams. There is, of course, a possibility that the person who left the inscription on the slate was a Boston blacksmith who called to collect a bill. It is equally possible that what was written was not Greek at all, but a prescription written by a prominent consultant while thinking of something else. But, on the assumption that the perpetrator of the outrage was a patient, we venture the diagnosis of *Anglo-agraphic aphasia*, and would recommend a writing master and a school dictionary.

CHOLERA IN SOUTH AMERICA.—From the latest weekly abstract of sanitary reports, issued from the office of the Supervising Surgeon-General of the U. S. Marine Hospital Service, Feb. 3, 1887, it appears that the cholera epidemic is steadily spreading to new places in the Argentine Republic, regardless of both quarantines and military cordons.

PROPOSED AMENDMENTS TO THE LAW REGULATING THE PRACTICE OF MEDICINE IN ILLINOIS.

A few weeks since we called attention to the very imperfect returns of births and deaths in this State, as shown in the last general report of the Illinois State Board of Health, caused by the neglect of physicians in reporting cases as required by the law. Some amendments to the law designed to aid in securing more complete returns in future have been presented in the State Legislature, now in session, and we trust they will receive early and favorable consideration.

If the State will furnish the members of the profession in every town convenient blank certificates, both for births and deaths, and annually publish the results in a form accessible for convenient study or reference, most certainly the physicians should be willing to fill the blanks and promptly mail them to the proper town or county officer. Correct vital statistics relating to the population of any town, county or State, constitute necessary factors in the study of etiology and the results of various measures for sanitary improvements. As every physician has a personal interest in whatever will advance any department of the science and art of medicine, he ought to coöperate cheerfully and promptly in securing full and reliable statistics of births and deaths, so long as the published results return *free* in the form of reports from the Health Board of the State. tabulated and associated with much additional valuable matter, all arranged convenient for use.

ANOTHER DEATH FROM CHLOROFORM.—According to the daily press, during the surgical clinic of Professor Wm. H. Pancoast in the Medico-Chirurgical Hospital, Philadelphia, February 9, 1887, a patient, male, aged 30 years, presented himself on account of false anchylosis of the proximal joints of the thumb and index finger resulting from previous injury. On attempting to forcibly restore motion the patient complained so much, that the professor ordered him a few inhalations of chloroform, and while he was still sensible enough to voluntarily hold up his hand, the professor took it, quickly flexed the joints freely, and removed the napkin in which had been placed at the beginning only "half a teaspoonful of chloroform," but respiration had ceased. The statement gives the whole time during which the chloroform had been administered as "only four minutes;" and that from a napkin admitting free intermixture of air. The most active and persevering efforts failed to resuscitate him. The post-mortem examination revealed much disease of the kidneys, and fatty degeneration of the liver and muscular structure of the heart.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, January 17, 1887.

THE PRESIDENT, EDMUND J. DOERING, M.D., IN THE CHAIR.

DR. LYMAN WARE read a paper entitled

A CLINICAL STUDY OF GLAUCOMA.

The author briefly referred to the history, pathology and etiology of glaucoma, and expressed his belief in the curative power of von Graefe's operation of iridectomy. Unmistakable symptoms of glaucoma are supraorbital and ciliary neuralgia, increased ocular tension, periodic diminution of vision, the appearance of a halo around artificial lights, a sluggish and widely dilated pupil and a shallow anterior chamber. Although increased tension may be associated with other diseases of the eye, its presence should always lead to a critical examination. Several cases were detailed: Mrs. M., aged 50, while riding in an open street-car, contracted a severe cold, which was followed by neuralgia over both eyes. The pain was so intense that at times she was delirious. Her weight was reduced from 110 to 80 pounds. She became entirely blind. On account of the eye being small and deeply set and the anterior chamber very shallow, sclerotomy was advised and performed. This gave immediate relief, but the pain returned again in a few days. When Dr. Ware saw the case the anterior chamber was almost obliterated, the glaucomatous lens pressed the iris forward until it came in contact with the cornea. With a von Graefe cataract knife a free sclero corneal incision was made and a portion of the iris excised, and the lens removed from both eyes. The pain greatly subsided, but the sight was irrecoverably lost. Another case was a man æt. 52 years, who complained of having had pain in and over the left eye for five or six months, and had seen the halo about street lights. On examination tension was found increased, vision diminished one-half. Some months later iridectomy was performed, and a solution of eserine (4 grs. to the oz.) instilled every four hours into the other eye. Pain was at once relieved and all symptoms of glaucoma rapidly disappeared. Mrs. M., aged 45, had frequent attacks of neuralgia and noticed defective vision in the left eye six months before coming under observation. Tension was found much increased; she had seen halo about artificial lights for eight or ten months. Distant objects could be clearly perceived by right eye. Iridectomy was performed on the left eye with a view of abating the

pain and preserving the vision of the right eye. The relief from pain was great, vision of right eye fully restored and left eye much improved.

Dr. E. E. Holmes reported

A CASE OF FOREIGN BODY IN THE ANTERIOR CHAMBER.

This case was of special interest to me on account of the difficult diagnosis and the difficulty attending the removal of the foreign body. The doubt regarding the diagnosis arose from the fact that there was a small central perforation of the cornea. Below this, and not connected with it, was a fine greyish line extending downward and inward (R. eye), apparently in the substance of the cornea, fairly into the angle of the iris and cornea. This resembled the channels left after the removal of fine slivers of grain stalk which are sometimes thrown into the cornea obliquely from threshing-machines. The patient explained the accident as follows: He was setting a machine punch so the punch would accurately fit the die. The power was applied, when the punch did not accurately correspond to the die. At the same instant something entered the patient's eye. He came to my house twenty-four hours after the accident with the eye slightly red, but not painful. I prescribed atropine and sent him to the hospital. The next morning the pupil was round and fully dilated. The media were all clear. I felt great anxiety in regard to the case, but inasmuch as during five days there were no symptoms of inflammation along the supposed track in the cornea, I finally became convinced that there was a fine splinter in the anterior chamber, in close contact with the cornea.

I made quite a long incision through the lower border of the cornea, the knife touching and moving the piece of steel. I endeavored by means of a fine forceps to seize the lower part of the steel and disengage the point from the tissues at the angle of the iris and cornea by carrying the steel farther towards the pupil. This was found to be impracticable, since the lower end of the piece was firmly held by the tissues. I used all the violence I considered warrantable. As the anterior chamber was without aqueous humor, there was some difficulty in further procedure without violence to the lens or iris. I consequently extended the wound in the cornea upward so the upper end would correspond with the upper end of the steel. This end was easily seized and with considerable force withdrawn. The splinter was three-sixteenths of an inch in length. Eserine at first, then atropine with antiseptic dressings were applied with great care. There was no reaction, the patient recovering perfect sight, except as far as there was dimness from the central cicatrix in the cornea. Vision was good five weeks after the patient had returned home. I must confess the almost V-shaped incision in the lower border of the cornea did not please me.

Dr. Holmes also reported

A CASE OF INTRA-OCULAR TUMOR.

This tumor, filling the sclerotic, is a sarcoma of the choroid. The patient, a man 62 years of age, had been under the observation of several specialists during the past year, but could not give me a definite expression of their opinion. When he came to me, a few days ago, the cornea was perforated and presented a staphylomatous projection of the growth. For a year there has been pain and for the last six months very great pain. The tissues of the orbit around the globe were greatly swollen, but not indurated. In enucleating the eye I expected to find the sclerotic destroyed posteriorly and the orbital tissues invaded. The enucleation, however, was performed as easily as in ordinary cases. The optic nerve is seen to be enlarged several millimetres behind the sclerotic. The swelling in the orbit was caused by nodules of fat filled with numerous blood-vessels. Dr. Ochsner pronounces the tumor to be a small round-celled sarcoma with very little pigment. The nodules of fat are free from sarcoma cells. This class of tumors, if removed early, are not very liable to return in the orbit. They may, however, reappear, especially in the liver or other internal organs. They must, consequently, be regarded as quite malignant.

Dr. Boerne Bettman read a paper on the

CONNECTION BETWEEN OCULAR AND NASAL DISEASES.

The author thought that numerous pathological conditions of the eyes and lids are attributable to abnormal changes in the nose, and that in these cases treatment of the ocular organs alone will fail to alleviate the trouble. After referring to Hack's monograph on the subject, Dr. Bettman detailed several cases in substantiation of his theory: A boy of 10 applied for treatment of epiphora of both eyes. The eyes were constantly weeping. An examination of the nose revealed an extensive swelling of the anterior portion of both turbinated bones. When these parts were touched with the probe profuse lachrymation was induced, and a light thrown into the eye by means of the ophthalmoscope produced violent sneezing. A deep incision was made in the swelling with a knife electrode, and a flat burner was also employed. The slough was completely thrown off in fourteen days and the boy cured in one month, the eyes receiving no treatment. Polypi of the nose have been found to produce secondary affections of the eye: Hermann S. was prevented from following his trade of a cabinetmaker on account of the excessive flow of tears; he also complained of pain in the eyes. Polypi were removed from the middle turbinated bone with the Jarvis snare and a cure effected. E. B., aged 16, was extremely sensitive to light and the eyes were both bathed in tears. Each time the eyes were exposed to a glare of light she sneezed violently. There was Hack's swelling in both nostrils. Two pledgets of cotton were soaked in a 5 per cent. solution of cocaine and allowed to remain five minutes at a time. There was an immediate effect, and in three-quarters of an hour she was able to bear the light. The patient refused cauterization and employs cocaine to avert photophobia. The majority of cases coming under Dr. Bettman's observation have been treated by applications of the galvano-cautery to the nasal membrane. The applications restricted to the anterior end of the turbinated bone frequently fail to give relief. It has been found that a sensitive area

exists at the posterior end of the inferior turbinated bone and also at the anterior part of the nasal cavity, in the angle forming the boundary of the vestibule. In conclusion, the author thought oculists should always subject the nose to a thorough examination when seeking the source of ocular complaints.

DR. H. M. STARKEY read a paper entitled

SOME MODIFICATIONS IN THE TREATMENT OF STRICTURE OF THE NASAL DUCT.

The author said that about 1883 the Western Suppository Co. made a lachrymal bougie of medicated gelatine of such elasticity that it could easily be passed into the nasal duct. It was less painful than a metal probe, and its slow solubility kept the mucous membrane at the point of stricture distended so that it could be acted upon by the medicine from thirty to sixty minutes. He thought results showed the use of electrolysis in these cases to be often unsatisfactory. The object to be attained is to restore the diseased parts to as nearly a normal condition as possible, and the most satisfactory treatment is by using injections more and probing less frequently. The author determined to try the effect of probing the punctum without slitting the canaliculus, followed by astringent injections over the inflamed surface. This treatment proved entirely satisfactory, and in about five weeks a patient went to his home in another State with apparently perfect recovery, and no destruction of tissue.

The following case was given as illustrating the author's method of treatment: Mrs. L. suffered from lachrymation of each eye for two years. There was severe lachrymal conjunctivitis of the right eye, the punctum being contracted one-half. On dilating the right punctum a No. 2 probe could be passed without difficulty, but the whole interior of the nasal duct had the peculiar velvety feeling that is caused by thick villous mucous membrane. The same condition, in less degree, was found on the left side. Treatment was commenced by applying a weak astringent and washing out the lachrymal canals thoroughly each day with boric acid lotion, followed by a weak astringent. Once a week a probe was passed through the dilated punctum down to the naris, using a larger probe each time until No. 7 was reached. The result was satisfactory, and in six weeks the patient returned home apparently well.

DR. W. FRANKLIN COLEMAN read a paper on

SYMPATHETIC OPHTHALMIA.

Disease in the sympathetic eye generally occurs when there has been a wound or operation in the dangerous zone of the diseased eye. Becker, in 1875, collected twenty two cases of sympathetic ophthalmia from cataract operations, foreign bodies lodging in the eye, and degeneration of a lost eye, or other causes. Dr. Coleman read in detail the clinical history of the disease, and enumerated the causes, histories and results of the treatment of a large number of cases. In regard to treatment he advised as per the following:

CONDITION DISEASED EYE.	CONDITION SYMPATHETIC EYE.	TREATMENT.
Blindness.	Normal	Enucleation in unintelligent and children.
Blindness.	Sympathetic irritation.	Enucleate.
Blindness.	Sympathetic inflammation	Enucleation not often advisable.
More or less vision	Normal.	Do not enucleate generally.
More or less vision	Sympathetic irritation.	Better enucleate.
More or less vision	Sympathetic inflammation	Do not enucleate.
Acute ophthalmitis	Normal.	Never enucleate.
Acute ophthalmitis	Sympathetic irritation.	Puncture and foment diseased eye, then enucleate.
Acute ophthalmitis	Sympathetic ophthalmitis.	Treat ophthalmitis, and then enucleate.

DR. F. C. HOTZ said: I think the theory of the author in regard to the closing of Schlemm's canal and the approximation of the iris to the cornea interfering with filtration cannot account for glaucoma. Pathological anatomy has so far failed to find the cause, and we have to rely on clinical studies to build up a theory which will account not for the late stage, the fully developed glaucoma, where the sight of the eye has been permanently destroyed by the disease, and which the pathologist gets from the oculist after enucleation, but for the first stage, the premonitory symptoms before it becomes an acute attack; a stage which the pathologist has not yet investigated with his microscope. At that stage who can say certainly what glaucoma is? It is probable that various causes lead to the same result. I believe that the agglutination of the iris to the cornea, the compression of Schlemm's canal or any other part of the eye, are consequences, and not primary causes of glaucoma. I was somewhat surprised that, in a paper addressed to general practioners, the author attached so little importance to the clinical symptoms in glaucoma, of a general character, such as gastric and febrile disturbances in connection with hemicranic headache. These symptoms often cause the practitioner to fail to discover glaucoma. I can recall a number of such instances. Last October a lady came under my care who had been under the treatment of a physician for four or five weeks for malarial fever and dyspepsia, which was the beginning of an undoubtedly characteristic and typical attack of glaucoma. But the attending physician's attention was attracted by the coated tongue, the nausea, vomiting, severe headache and excited pulse, and he treated the patient for these daily attacks of headache, which he diagnosticated malaria, and used antiperiodic remedies, utterly disregarding the condition of the eye, although the sight was at first nearly extinguished, and only returned to a certain extent after the attack lost somewhat its severity. Another case: A poor woman lost one eye from glaucoma ten years before; the eye was blind and hard, showing the characteristic state of an eye in which glaucoma had run its course. She was attacked by a severe pain in the head extending over the left side, could not sleep for several weeks, was nauseated, vomited, and showed symptoms of some general disturbance. The physician

treated her for the stomach trouble and headache, and although she told him time and again that her sight was getting poor, and suggested that an oculist had better examine her eye, he paid no attention to this, and the result was that two months after this attack the sight was entirely gone and could not be restored. In still another case both eyes were neglected until the patient could perceive only a little flicker of light, before it was considered necessary by the attending physicians to pay any attention to the eyes. Dyspepsia, gastric fever, malaria, and sick headache were the diagnoses, and the treatment was in accordance. I think it is well to bring out these points, and to call the attention of every physician to the fact that such attacks sometimes mean something more serious than a disturbance of the stomach, and that when the patient, during such attacks, speaks of the eyes as being troublesome, or the sight as becoming dim, it is worth while to pay attention to it, and to remember that acute glaucoma is often ushered in with these general constitutional symptoms.

Dr. Lyman Ware said: I have only a word to say about the disturbance of the equilibrium of secretion and excretion. It has been fully demonstrated that it is only by restoring the equilibrium that sight is saved. I quite agree with Dr. Hotz regarding febrile symptoms, but it is my experience that they are *secondary* rather than *primary*.

Dr. Henry Gradle said: The cases which Dr. Bettman presented are of great interest from the fact that they have only lately been recognized. Dr. Gruening, of New York, was the first to point out that there existed affections apparently of the eye, but which in reality originated from the nose. I have watched for these cases ever since Gruening's paper first appeared, and would say that the cases in which the nasal trouble is *entirely* the cause of eye disease are not very frequent. But I have seen instances where affections of the eye were certainly complicated by nasal trouble, and the nasal trouble prolonged the eye disease. I recollect a number of cases of eye disease either kept up or originated by nasal trouble. The first of these is a pseudo-erysipelas of the lids, which is not an infectious disease, but merely a secondary affection of the blood-vessels, only resembling erysipelas clinically. It is entirely due to irritation and engorgement of the blood-vessels in the front part of the inferior turbinated bone. A second type of nasal affection giving rise to eye trouble is true periodical hay fever, and a non-periodical irritability of the nose, resembling hay fever. I have published four cases, and have since seen another, of periodic conjunctivitis characterized by the formation of granules and follicles, which trouble always receded in winter, to reappear again in the spring or summer. In two of these cases a diagnosis of hay fever has since been made. I have seen a case which had been treated for trachoma by a number of specialists, where the history of the nose showed that the affection was of nasal origin. The same trouble may exist in a non periodic form, and present all the symptoms of hay fever, the trouble not being limited to any season, but occurring in any part of the year, lasting a few days or weeks. But these cases are not common. In one of these cases I was able to effect a complete cure by cauterization of the nose. A third type of nasal affection giving rise to ocular symptoms is true catarrh of the upper and front part of the mucous membrane of the nose, where the membrane is distinctly reddened and where there are generally slight and by no means prominent symptoms of catarrh. In these cases I have very frequently found troublesome epiphora without any stricture of the duct; in some cases the test was made by using delicate probes. Such cases, I can testify from my own experience, are entirely curable by simple treatment of the nose. I have found a not sharply defined case of astheropia, due not entirely to the nose, but complicated with refractive trouble, where nasal treatment was necessary to complete a cure. Once or twice I have seen polypi play the same rôle, and a number of times I have found the starting-point of the irritation not in the front of the nose, but in the posterior part, in the form of the common adenoid vegetations.

This is a subject which has not been fully dealt with in literature, but I have several cases where the extirpation of the large post nasal tonsil has given decided relief to the eye. Then I have found that in a few cases ulcers or chronic inflammation of the cornea were kept up by nasal trouble, which was probably started in the first place by a copious flow of tears from the eye. I have observed that local treatment by means of calomel, atropia, and the customary applications to the eye, proved inefficient, while the addition of nasal treatment hastened the cure of some of these tedious cases. The nose was probably normal to start with, but the continued flow of tears produced either small erosions or some little catarrhal troubles of the mucous membrane at the front of the nose, subsequently increased to chronic catarrh, leading to congestive obstruction of the tear passages, or exerting an unfavorable nervous influence upon the eye trouble. Finally, as a rare instance, I will mention one case which is now cured. The patient was sent to me for polypi, which, however, proved to be the minor trouble in the nose, the real trouble being an immense vascular tumor occupying the entire floor of the right side of the nose, covering the inferior turbinated bone and reaching about to the middle turbinated bone. The patient had been reduced in strength, and the slightest exertion on his part produced hæmorrhage, therefore the most careful operative procedure was necessary. I finally succeeded in removing the entire tumor by the galvano-cautery in twenty sittings. As the tumor began to shrink the hæmorrhage was less, but he lost thirty or forty ounces of blood in six weeks. During the latter part of the treatment his right eye began to bulge, and he complained of double sight. It has remained healthy, but there was an unmistakable development of vascular tissue in the orbit and behind the eye, which receded by the time the tumor had been extirpated from the nose.

Dr. Boerne Bettman said: I was very glad to hear Dr. Gradle corroborate my statements. I am well aware that these cases are comparatively rare; although I have recorded in my case book about

twenty, seen during the last two years. I am acquainted with the article published by Gruening. My attention was first called to the subject by the work of Hack, and since reading that I have made it a point never to allow an eye patient to leave my office until his nose has received a very thorough examination. I have seen a number of cases such as mentioned by Dr. Gradle, but I thought it better to describe to-night only the typical ones. The connection between ocular and nasal troubles is a point all oculists should bear in mind, and when they find no local cause for epiphora they should examine the nose.

DR. A. P. GILMORE said: I would like to add one word in regard to glaucoma, and that is, the importance of tension does not seem to me to have been sufficiently dwelt upon. Any careful general practitioner can ascertain whether the tension is increased or not, simply by comparison with the tension of his own eye. All pain referred to the eyeball, with or without the accompanying neurotic symptoms mentioned in the paper, does not mean glaucoma. Unless there is increased tension you cannot diagnosticate glaucoma. The author does not mention Badal's operation in the treatment of glaucoma. It is certainly entitled to a place among the operative measures. I will only speak of one point in Dr. Starkey's paper, viz.: epiphora. I do not believe, with many, that epiphora is due primarily to a stricture which prevents the escape through the nose of the natural amount of fluid secreted, but is due rather to reflex irritation causing an hypersecretion of tears. In health the eye is moistened with a moderate secretion. When the lachrymal gland is removed the eye continues to be moist and the cornea retains its lustre. Tears are not essential to the lubrication of the eyeball; their function is to protect the eye against foreign bodies. A bit of dust under the lids will cause profuse lachrymation and the tears will flow over the face, not because of an obstruction to the natural amount of fluid secreted through the natural passage, but because of a hypersecretion due to reflex irritation. For treatment I never use a probe larger than Bowman's No. 6, usually No. 4. I seldom find it necessary to make Bowman's operation in epiphora. I think its use is unnecessarily frequent. I use astringent and antiseptic solutions with a syringe small enough to be easily introduced into the puncture when slightly dilated. I am very careful to treat any nasal complications; it is impossible to treat diseases of the eye successfully without recognizing and treating reflex irritations of the nose.

DR. STARKEY said: My paper was necessarily cut down very much. As first written I had given some space and attention to cases similar to those mentioned by Dr. Bettman. I had also spoken of the probability that in many cases of epiphora, where there had been inflammation of the tissues lining the lachrymal canals with partial closure, a continual irritation of the canal in some way, perhaps reflexly, so stimulates the lachrymal gland that the tears are poured forth more abundantly. There are well-known cases where the lachrymal canals have been completely closed by injury or operation, and yet lachrymation is not annoying, although the gland has not been extirpated; tending to show, as mentioned by Dr. Gilmore, that the normal secretion of tears is ordinarily very limited. It seems to me that in many instances lachrymation is due to irritation propagated reflexly, and therefore in treating such cases I thought of trying to restore the mucous membrane of the lachrymal canals to the normal condition, as well as to look for and treat points of irritation elsewhere.

DR. J. E. COLBURN said: In cases of injury where there is danger of sympathetic irritation, a foreign body being lodged in the anterior chamber, iris, ciliary body, or the choroid, where the chances are that in order to give all the advantages of treatment the patient must necessarily be idle for a considerable length of time, and where the sight in the injured eye has been irretrievably lost, I think it advisable to make the operation of evisceration or abscission as early as possible. The patient, if a laboring man, is then relieved from a long enforced idleness and anxiety, and the danger that lack of care frequently causes in this class of cases. Where the appearance is first to be considered, and the patient can be constantly under observation, the operation can be postponed, but with the strict injunction the patient is to be under constant surveillance. In a large majority of cases where there is great damage done and the foreign body is out of sight, it is safe and advisable to make the operation, trusting to that to save the other eye. In a case that came under my observation recently a piece of steel entered the anterior chamber near the centre of the cornea, passed through the iris and lodged in the sclera. No operation was performed, and the fellow eye became sympathetically affected, and on account of its sympathetic disturbance had to be removed. The steel produced some local irritation, and the eye was caught and rolled strongly toward the nasal canthus, and the piece of steel was found projecting into the orbit from the sclera and was removed. The track of the steel through the sclera was surrounded by a large mass of fatty degeneration, which was also removed. Vision remained about one-half.

DR. W. FRANKLIN COLEMAN said: I agree with Dr. Colburn as to the desirability of timely enucleation in the case of a laboring man to save his time, but should ophthalmitis set in I should not, under any circumstances, enucleate the eye. I believe it is rare for German operators to risk removing an eye in a case of ophthalmitis, but in England they scarcely hesitate to remove an eye under any circumstances. I have never regretted recommending a patient to have an eye enucleated, but I have sometimes regretted that I did not urge the patient to have the eye out in order to avoid the fearful risk of sympathetic inflammation. I am astounded at the position of so eminent an authority as Noyes who says, "I hesitate to enucleate the eye on account of appearances, and do not do so unless symptoms of irritation or inflammation appear which I cannot relieve with medical treatment." In nineteen out of twenty cases the lost eye is not worth saving, but is a blem-

ish, and an artificial eye would be more ornamental. And if a man wishes to get work he will deceive the very elect as to which is the real and which the artificial eye. I cannot see any advantage in not advising enucleation where the eye has been injured to such an extent as to menace the fellow eye.

Dr. Gilmore asked Dr. Holmes why he did not try a magnet?

Dr. Holmes replied that he had been in so much doubt what to do that he thought best to first try incision and forceps. He did not believe the best magnet could have liberated the end of the steel, buried in the tissues of Fontana's space. It is remarkable that so long a piece of metal could have been thrown through the cornea, making so minute an opening, and lodged in the anterior chamber, as described, without injury to the iris or lens.

Dr. Coleman said: To my mind the magnet in the eye is a delusion and a snare. For instance, if you introduce a magnet within the eye not knowing where the foreign body is before placing the point of your magnet, you have to search the whole cavity of the eyeball and reduce it to a jelly before you can extract the body. Granted no great harm is done if you do not extract it with the magnet, for you can afterwards enucleate the eye. But so far as I have tried it, and have seen others experiment with the magnet, it does not give satisfaction.

Dr. Holmes replied: That is very true in many cases where the steel cannot be seen with the ophthalmoscope, but I think where a view of the foreign body can be obtained early, the magnet may be employed with brilliant results. There are now so many cases reported with excellent results after extraction with the magnet, that I cannot think it a delusion and a snare by any means.

Dr. Colburn said: I recently saw an interesting case in which the foreign body was lodged about half way between the ciliary body and the entrance to the optic nerve. The operator cut through the sclera about where he thought it was lodged, passed the magnet in and brought out the foreign body apparently without wounding the retina at the point of attachment. The patient made a good recovery.

SUFFOLK DISTRICT MEDICAL SOCIETY.

Section for Clinical Medicine, Pathology and Hygiene.

Stated Meeting, January 13, 1887.

Albert N. Blodgett, M.D., Secretary.

The meeting was called to order at 8 o'clock by Dr. F. I. Knight, Chairman. On motion, the reading of the records of the last meeting was omitted. The Chairman announced the subject for the present meeting to be a debate upon the danger to the public from

ARSENICAL WALL-PAPERS,

and called upon J. R. Chadwick to open the discussion.

Dr. Chadwick, in response, presented an interesting and vivid account of the occurrence of arsenical poisoning in his own family[1] on several distinct occasions, and spoke of the uncertainty which exists in relation to the presence of arsenic in wall papers, even when the dealer presents the certificate of a chemist as evidence that the papers are free from this dangerous substance. At the close of his remarks, Dr. Chadwick offered the following resolution:

Resolved, That it is the opinion of this meeting that the clinical evidence already adduced in this and other countries, establishes beyond doubt the fact that arsenical wall-papers will, in many instances, produce symptoms of poisoning by arsenic in persons occupying the rooms whose walls are covered by such papers.

The resolution was seconded, and was then declared open for discussion.

The Chairman introduced Mr. J. F. Bumstead, the well-known paper dealer, who was invited to address the meeting. Mr. Bumstead responded by saying that he did not desire to occupy the time of the members to any great extent. In all large establishments there are many persons employed, and the facts in regard to the purchase of paper by Dr. Chadwick are, that Mr. Bumstead did not personally exhibit the papers, but a salesman in the service of the firm was the person who made the transaction. The statement was made to the purchasers that no papers would be shown except such as had been pronounced by chemists of repute to be free from arsenic.

It is desirable that the position of the paper dealers should be placed before the profession in a more correct light than is at present the case. The efforts and desires of the dealers are directed toward the elimination of dangerous articles from the colors and other processes of manufacture of wall-papers, and the substitution therefor of equally useful, but harmless methods of treatment, by which the health and lives of the people may not be endangered. Personally, the paper dealers do not place credence in very many of the alarming reports which are, from time to time, circulated in relation to the occurrence of dangerous interference with health from the action of the colors used in wall papers. It is both a mistake and an injustice to suppose that the dealers do not take pains to have their wares examined in relation to their safety. Messrs. Bumstead & Co. have had four different chemists in their service during the last twelve years. The intention was to exclude dangerous papers from the business. About two or three years ago, an agreement was made between the wall paper manufacturers and the dealers, that the manufacturers should take back all arsenical papers. For some time the manufacturers would not accept any orders from the trade, on account of the great frequency of rejected papers, but lately they again consented to receive all papers returned to them which contain more than a trifling amount, called a trace, of arsenic. A portion of the present disturbance in regard to arsenical papers arises from the fact, that many of the papers now examined are such as were manufactured some years ago, and some of the papers have been for years on

[1] See page 206.

the walls of inhabited rooms, where they have produced no appreciable symptoms of poisoning until the present excitement was inaugurated. Certain papers are even now purchased from a stock which has long been in the store, and which may contain an amount of arsenic never at present used in the manufacture of wall-papers. The occurrence of arsenic in these accidental ways should not be looked upon as fairly representing the paper manufacture at the present time.

DR. C. E. STEDMAN said that he had little to offer to the remarks of those who had preceded him. Some years ago he purchased wall-paper from a firm now gone out of trade, and it was put on the walls of his house. For two or three years the occupant of that room was continually ill, the symptoms being a persistent diarrhœa, with colicy pains, etc.; and finally a severe form of eczema supervened, for which various forms of treatment were ineffectually tried, and at length the patient was placed under the care of Dr. Wigglesworth, of this Society. At a later period, Dr. Stedman for a time occupied the room in question as a sleeping room for himself, and soon became ill, suffering from an obscure form of ocular disease, for which he consulted Dr. Wadsworth, of this Society. After some time, Dr. Wadsworth suggested the possibility of arsenical poisoning, and that the wall-paper might be the source of the trouble, when the paper was subjected to chemical analysis, and was found to contain a large amount of arsenic. The paper was at once removed from the walls, and a paper substituted which contained no arsenic, since which time there has been no recurrence of the symptoms of poisoning, or in fact, any other signs of impairment of health in any member of the family.

PROFESSOR D. G. LYON, of Cambridge, was called upon by the Chairman, and rising, said that on the 19th of January last he caused the publication of a long account of the troubles which had occurred in his house and family, for which, in his mind, their existed no cause, except the arsenical paper on the walls of his house. His family consisted of three members, Mrs. Lyon, himself, and another instructor in the University. They were all affected by a variety of distressing symptoms, one of which was persistent insomnia. It was almost impossible for any member of the family to sleep at all. In addition to this, a common symptom was pain in the head, palpitation, general debility, etc., which proved refractory to all methods of treatment for its relief. Physicians were called, but were not able to alleviate the distressing conditions, which now began to cause serious alarm. Professor Sänger was consulted, and he examined the furnace, sewers, etc., but being unable to locate the trouble in either of these parts of the household apparatus, he at length suggested the possibility of the wall-paper being the agent which had operated so disastrously upon the family. This was immediately submitted to chemical analysis, and yielded a large amount of arsenic.[2]

[2] I had recently read the admirable paper of Professor Wood on the subject of "Poisoning from Wall-Papers," and observed that the symptoms which he there recorded, were almost identical with those experienced by the members of my family, from circumstances similar to those surrounding the cases mentioned in the article by Professor Wood.

Four rooms were covered with paper containing extremely large quantities of arsenic, as determined by chemical analysis. The papers were at once removed, and the walls recovered with papers which were free from arsenic, and the immediate result was the entire and rapid disappearance of all the symptoms of disease which had so long existed, and which had thus far been quite unaffected by any form of remedial treatment.

Chemical examination of the wall-papers of different dealers, a year ago, showed that more than 50 per cent. of the papers in the stock of the Boston dealers contained a much larger amount of arsenic than the bill at that time presented before the Legislature asked for. The manufacturers claim that a law which should limit the amount of arsenic contained in wall-papers would seriously affect their trade, and that certain forms of papers cannot be produced without the aid of arsenic, or at least, without the use of substances in which arsenic may exist. Within a stone's throw of my house in Cambridge are families which have suffered more than my family did. In all parts of this Commonwealth, cases of poisoning from the use of arsenical papers are known, and the appeal of all these people is only for a law by which they may be protected from a danger which they have no means of recognizing for themselves. Those people who bought wall-papers in Massachusetts, and especially in Boston, a year ago, assumed a serious risk to the health of their families, from the almost universal presence of arsenic in the wall-papers of that time. I could report more than forty families thus affected from this cause.

PROFESSOR E. B. YOUNG said that he has never appeared before the legislature, nor has he ever published anything in the papers in relation to the dangers from arsenic. He has been a long, but silent sufferer from the effects of poisoning by arsenic in wall-papers in his house. In his case the symptoms were a palpebral inflammation of both eyes with continual lassitude, weakness, etc. His daughter, formerly strong and robust, became weak, languid and feeble. Professor Young himself was not well. The occurrence of such an amount of sickness in his family without adequate cause made him anxious. He employed men to overhaul the sewers of the house, but the drainage was found in good condition. At this time Professor Lyon suggested the possibility of arsenic as the cause of their distresses, and the papers of the house were at once subjected to analysis. In a light-blue paper arsenic was found to the extent of 4.97 grains to the square yard. In some English cretonne used for upholstery, there was discovered 4.00 grains of arsenic to the square yard. This had been in service for some time, and had begun to wear, and with the destruction of the texture of the fabric, the arsenic had become more readily disseminated. The paper of another room contained ¼ grain to the square yard. Professor Young's daughter was much troubled by an affection of the throat, for which she was placed under the care of Dr. Knight, the Chairman of this meeting, and, as she did not improve, she was sent to Dublin, where she began to get better. After a time the urine was

examined, and was found to contain arsenic. After the restoration of the house, the daughter's health was again restored, and a letter from her physician who has had the urine again examined, contains the the report, "no trace of arsenic in the urine at present." In the dining-room of the house arsenic was discovered in the paper. The result of all this has been to cause a large outlay in money, as well as a great amount of anxiety through a long time; and we feel that we have the right to demand legal protection from this known and recognized source of danger to our families. Nobody claims that arsenic causes *all* the illness in families, but it undoubtedly causes *some* of it. Nobody thinks arsenic does any good in the papers, and is certainly better out of the way, than to be thus a constant source of possible danger. Another case was that of the daughter of a clergyman of Jamaica Plain, who was ill from an obscure cause, but in whose house the papers were found to contain arsenic. She was quite well soon after the old papers were replaced with non-arsenical ones. Another case was that of an entire family in Cambridge, the name of which would attract attention as belonging to the higher walks of literature, in which there was unmistakable poisoning. Another instance occurred in Milton, where there is a house, one room of which possessed the peculiarity that every person who occupied this particular apartment was certain to become ill. Each member of the family had in turn occupied this chamber, and each in turn had been similarly affected. The paper from the walls of this dreaded apartment was analyzed and contained a very dangerous quantity of arsenic. An Episcopal clergyman and his wife were both poisoned by arsenical paper not long since. The husband was confined to the bed in the room, and grew worse, while the wife, who was not so ill, but could pass a good portion of the time out of the room, was not so seriously affected. Another well-marked case occurred in Waltham. Perhaps the most amusing fact, however, is that Professor Sänger was himself poisoned last summer at the seashore. He was assigned a room which was papered with highly arsenical paper, and was soon made ill by it. Professor Young then passed specimens of the papers removed from his house, to the members of the Society, remarking that there is absolutely no way in which arsenical papers can be detected excepting by chemical analysis, and that therefore the most careful selection is no protection against this danger.

Prof. Wm. B. Hills, of Harvard University, was then announced, and spoke as follows: It has fallen to me to examine as many papers, probably, as to any one in this city, during the past few years, and I now examine for two of the most prominent paper houses in the State. From my experience I am convinced that the present alarm concerning arsenical poisoning from this source is unnecessarily great. The results of analysis during the past few years show this fact conclusively, as the following figures will prove. During the period from 1879 to 1883 the percentage of arsenical papers was from fifty-four to sixty-five per cent. of all papers examined. In 1884 the percentage had fallen to forty-seven per cent. arsenical.

In the first series of figures, those from 1879 to 1883, from thirty-one to thirty-five per cent. of the arsenical papers were strongly or dangerously arsenical. In the second series of figures, the proportion of strongly arsenical papers had fallen to twenty-two per cent. In 1886 there was a large decrease in the arsenical papers, only thirty-three per cent. of all papers examined containing any traces of arsenic. Only thirteen per cent. of these papers contained anything more than a trace of arsenic. These figures are the more startling on account of the extreme delicacy of the Marsh-Berzelius test, which was employed in 1886 only; and it appears that the matter is slowly settling itself by the common efforts of the manufacturers and the trade toward satisfying the demand of the public that papers shall be made without the use of dangerous substances. It has been stated in this meeting that all papers are at present still strongly arsenical. This statement is not in accordance with my experience. Most of the papers taken from the walls of rooms are such as were manufactured some years ago, and may naturally be different in chemical composition from the papers made to day. The fact is that papers now manufactured do not contain a dangerous amount of arsenic. I do not think that it is desirable to appeal to the legislature until we know definitely the present state of the case, and until we know the limit which it is safe to establish in relation to the accidental presence of small amounts of arsenic in the papers. A law to prevent the sale of "Rough on Rats" would save more lives than a law to prohibit the sale of wall-papers containing a trace of arsenic.

Dr. H. J. Barnes asked what reason exists for the use of arsenic at all in the manufacture of wall-papers?

Professor Hills replied that there is no reason for its use. It is not used intentionally, but exists as an adulteration in some of the pigments employed in the preparation of the paper. It is an impurity in certain of the mineral pigments which have been employed in the manufacture of former papers. Manufacturers are now trying to keep the arsenic out of their colors.

Dr. Edward Wigglesworth said that he had but little to add to what had been said in relation to the dangers from arsenical papers. He had suffered in his own family of four persons, from this cause. The symptoms were not alike in all, but were clearly traceable to the papers on the walls. Among the peculiar symptoms in this instance were certain not mentioned by those who had preceded him, and one of these was a tremendous desire to urinate, with a burning at the neck of the bladder, which ceased as soon as the urine was passed. There was no kidney trouble, and no affection of the bladder or meatus, nor any other condition to account for the distress which was present. A little boy occupied a newly-papered room, and was soon affected with a palpebral irritation of considerable severity. The paper was analyzed and found to be arsenical. A little girl of three years was poisoned. Dr. Wigglesworth stated that both he and his wife are still ill from the effects of poisoning, and the papers were found to

contain from fifteen to twenty times the amount of arsenic which has been considered the limit of safety. When the symptoms of poisoning first became evident the cause was not recognized, and a journey to the South was made with the result that all symptoms of disease entirely disappeared. On returning, however, the original disturbances again appeared in their former intensity. The paper was removed and replaced by non arsenical paper, and the family is now on the way to recovery.

DR. STEDMAN mentioned a case of eczema which had been treated by Dr. Wigglesworth. The child had been under the best of care before, and nothing in the shape of attention could have been rendered that had not been most conscientiously carried out. When the child was placed under the care of Dr. Wigglesworth, he at once decided that there must be some unsuspected cause for the disease. He went to the house of the patient, who was a dispensary case, and examined the plumbing with great care, and also inspected the premises in other directions. He at length decided to have the wall-paper examined, and it was found to contain arsenic in large amount. The child was removed to another room and soon became better, but was not well. Upon removing to another house, however, there was complete recovery from all symptoms of disease. The daughter of a medical friend was seriously ill, with symptoms which would not yield to treatment. The paper on the walls was examined and was found to be loaded with arsenic. In the house of a relative is one room which seems to be a source of disease to all who inhabit the apartment. It has proved nearly fatal to two persons, and many more have been ill from occupying it. The cause was not suspected until the paper was examined and was found to contain a very large amount of arsenic.

MR. C. TENNANT LEE, an analytical chemist, was present by invitation, and spoke as follows: The discussion of the subject of arsenical poisoning from wall papers, which has been carried on here, is of a very interesting character, and the cases are numerous and interesting, but the matter seems to rest on a very insufficient basis, and must certainly be considered as not proven. The cases so often classed by physicians as arsenical poisoning are most generally deduced from defective or careless observation, and are in reality not due to arsenic at all. I have been surprised to see how often I have been consulted in relation to the sanitary conditions of dwellings, in which some dreadful condition was supposed to exist, and have found a defective drain, a leaky closet or some other hygienic fault, the remedial treatment of which has removed all symptoms of the threatened danger. It is often the case that a foul tank in connection with the furnace will cause serious, and sometimes truly alarming symptoms, but these causes are seldom heard of by the physician or public. The excitement at present in relation to arsenic, is due, in great part, to the fact that the attention of the public is at present directed to this subject, and every one is thinking of it. When the scare about arsenic has abated, the number of cases supposed to be the result of poisoning from this source will become less, and substantially the same immunity from the trouble will be restored, as existed before the people were so much aroused by this imaginary danger. Physicians make the mistake of frequently ascribing to arsenic those conditions which are due to quite another set of causes. The cases of arsenical poisoning thus far reported, all end in recovery, and the entire history of the present craze is but two or three years old. It is far too early to be certain that these are cures, or that arsenic will produce such a varied series of clinical conditions. An example of the careless way in which physicians often account for strange symptoms by wrong theories, was illustrated by a case in which a girl was sick in a room papered with an arsenical green paper. This was removed, but the girl died. Some sensitive persons are poisoned by simply passing by a bed of poison ivy. In a certain family a new carpet was bought, and from motives of economy, the family decided to sew the carpet themselves. Those engaged in this work soon fell ill, but on relaxing their occupation rapidly recovered. On resuming the carpet-sewing, the old symptoms quickly returned. The carpet was now examined by the physician and was found to be "full of arsenic." The carpet was then analyzed by a chemist, and not a trace of arsenic could be found in it.

Rose-aniline is made by reduction of the substance by means of arsenic. The scarlet shirts and stockings which cause so much irritation of the skin, do not, however, contain arsenic. They are colored by nitro-benzole colors, which are not arsenical. The workers in the manufacture of Paris green are said by their employers, not to be injuriously affected by the nature of the substance on which they are employed. The skin of the employees is sometimes made raw, but they are not poisoned by the arsenic. There is one other point in which physicians are greatly in error. The opinion is generally disseminated throughout the profession that the arsenic is liberated as arseniuretted hydrogen. This is a great mistake, as arsenic cannot be liberated in any natural way in this form, and therefore cannot be a source of injury to the public in this form.

PROFESSOR HILL, of Cambridge, said that within the last few months he had seen but few cases of poisoning from arsenic, but formerly he had seen a great many of these cases with Dr. Sänger. The idea of establishing a *limit* to the degree to which arsenic may exist in wall-papers seems faulty, from the fact that there is no reason for the use of arsenic at all in the manufacture of wall papers. There are occasionally substances used in the papers which may possibly contain a trace, but this is too insignificant to deserve notice. In most cases in which the paper is examined, the amount of arsenic is almost nothing, or the amount is quite large. There is no medium grade. It is almost nothing, or the quantity is very great. Colors can now be easily obtained which are free from arsenic as an impurity, and those colors should be employed in all papers.

DR. R. STURGIS stated that a case of poisoning was known to him, in which the paper had been upon the walls of the room since the year 1873.

Dr. Henry Carmichael said that, there is no protection without analysis. No eye can discern where the arsenic is deposited, and no other means will adequately detect its presence. There is need of a clearer understanding upon another point. When we say that a paper is free from arsenic, what do we mean? If we mean that the paper does not present the indication of minute traces of arsenic, then it has not been my fortune to have discovered any papers free from arsenic. All papers will present the traces of small amounts of this substance, under any circumstances. Some of the ores used among the mineral pigments which are employed in the manufacture of wall-papers often contain arsenic as an impurity. Such is the ore of iron, which is extensively combined in the colors of wall papers. In this combination the arsenic is absolutely inert, and is quite harmless. In fact, this combination is almost identical with the preparation which is used in medicine, as the antidote to arsenic in cases of acute poisoning. Another source of error is found in the fact, that we are often inclined to lay the harm to the wall paper when there are other substances from which the poisonous symptoms might occur with fully as much probability as from the paper on the walls, such as the colored fabrics of dress, or the decorations or upholstery.

Dr. F. W. Draper spoke of his researches upon the dangers of arsenic to those employed in its use, or exposed to its influence. He said that he did not consult the employers of the men, or the contractors who did the work, but that he went directly to the men themselves. From them he learned that those men whose duty required them to be in the presence of the arsenic, and to handle it, were often sick, and not infrequently were obliged to suspend their labors. It is difficult to understand the statement made by one of the speakers, that constant employment in contact with so powerful and injurious a substance as arsenic should be without harmful influence.

Dr. G. E. Francis, of Worcester, offered a word of caution in relation to the accuracy of the opinion that all the disturbances so frequently ascribed to arsenic are in reality due to this cause. Before any further appeal is made to the Legislature we should be prepared to meet our opponents in every direction. Let us suppose that a paper which has been in service for twenty years has at length caused the appearances of arsenical poisoning. The analysis of the paper proves that it contains 2 grains of arsenic to the square yard. Now the question which must be answered is this: How much arsenic has been lost by the paper during the many years of service, if it still contains so large an amount at present? If the paper, after so long a time, still contains a large amount of the poison, then certainly it could not have lost much during that time; for the arsenic can be in only one place at a time. We should seek to ascertain how rapidly arsenic is dissipated by exposure to the air, and find out the rate at which it leaves the paper. We shall then certainly not be so liable to erroneous opinions and statements.

Dr. B. F. Davenport stated that the papers of almost any manufacturers may contain arsenic, even if the color is absolutely free from any appreciable amount of the poison. There are two principal questions: First, how much arsenic is really present in honest and well-selected papers? The second question is: What is the minimum quantity of arsenic which may induce the symptoms of poisoning? One undoubted form in which arsenic may be liberated is in the form of arsenuretted-hydrogen, from the presence of arsenious acid in contact with moulding substances, which evolve the hydrogen gas. In a case in which suicide was committed by the aid of "Rough on Rats," there was an evident odor of arsenuretted hydrogen on opening the stomach. The limit to which arsenic may be contained in wall-papers has received the attention of chemists all over the world, and only recently Professor Pettenkofer has suggested that the safety of the public would not be imperilled if the amount of arsenic did not exceed $\frac{5}{10}\frac{5}{0}$ of a grain in each square yard.

Dr. E. W. Cushing asked Professor Wood if there is any method by which a country physician may make an approximate analysis, or ascertain if there is any considerable amount of arsenic in a suspected paper?

Professor Wood said that the organic matter may be easily destroyed by the addition of a small amount of sulphuric acid with water, and the liquid could then be filtered and submitted to any of the common tests. If it is desirable to obtain the mirror of arsenic in a tube, it will be necessary to employ a cubic decimeter of the suspected paper; if it is thought necessary to produce the mirror upon a plate, a larger amount of the paper will be necessary, and the amount of arsenic required to form a mirror in this way will roughly be about $\frac{1}{10}$ of a milligrame.

The Secretary then read the resolutions offered by Dr. Chadwick, after which the question of adoption of the same was put. The resolution was unanimously adopted.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, December 17, 1886.

The President, Chas. Warrington Earle, M.D., in the Chair.

(*Continued from page 195.*)

ÆTIOLOGY, PATHOLOGY AND CLASSIFICATION OF SALPINGITIS.

GROUP III.—FORMS OF INFECTIOUS SALPINGITIS PRODUCED BY SPECIFIC, BUT AS YET UNKNOWN, MICROBES.

1. *Salpingitis Syphilitica.*—This form has been described by Bouchard and Lépine (*Gazette Med. de Paris;* 1866, No. 41). Both tubes were swelled to the thickness of fingers, and contained three gummata of the size of hazel-nuts. The description given by these authors of the tubal disease agrees fully with the changes brought about by syphilis in other organs. Of more recent authors, Gill Wylie expresses his opinion that tubal syphilis does occur ("Diseases of

the Fallopian Tubes," etc., January 24 and February 7, *The Medical Record*, 1885). He says that "syphilis may cause salpingitis, just as it does otitis or ozæna." He also calls attention to the fact that "endometritis in syphilitic subjects has a most obstinate character." Compared with the actual observations of Bouchard and Lépine, the clinical remarks of Gill Wylie are, of course, of theoretical value only.

Like Lawson Tait, I, myself, have never yet had occasion to observe an undoubted case of tubal syphilis. We should bear in mind, however, that our attention has been but little called to the anatomy and clinical forms of this disease. We are not justified in denying this form altogether, as we are not in a position to dispute the reliable authors who have testified to its existence. Others may have seen what we ourselves have never had occasion to witness. I desired to give a most complete enumeration of the forms of infectious salpingitis hitherto described; I could as little have omitted *salpingitis syphilitica* as I could have done *salpingitis actinomycotica*, of which also, up to date, but one authentic case has been observed.

2. Occasionally we find in young girls, who have never had intercourse with a man, tubes filled with pus and pelveo-peritonitis. This has been accounted for in various ways. It has been said that in these cases a serous catarrh is intensified and changed to a purulent inflammation; that the suppuration is due to catching cold at the menstrual period, or to a trauma. These cases have also been adduced as evidence to show "that tubal suppuration is not always of gonorrhœal origin." Yet also in these cases there is always an infection, and usually a gonorrhœal infection. I, myself, have seen a comparatively large number of girls of all ages, from infancy to puberty, who were infected with gonorrhœa. We know how easily the infecting germs are carried from one person to another; for instance, parents and children may use the same sponge or bath-tub; the germs may adhere to fingers, linen, etc. The girls infected may further spread the disease in school, and so on.

Aside from the gonorrhœal, the tuberculous infection is to be mentioned as a cause of pyosalpinx in young girls. Just at present I am treating a girl of 17, who is suffering from a disease of both appendages, complicated with pelveo-peritonitis. The tubes can be distinctly felt, and are thickened and nodular. She has a hectic appearance, like that of a consumptive; her lungs, however, are normal. The father of the girl was, not long ago, operated on for tubercular orchitis. I hope that the operation will confirm my diagnosis of *salpingitis tuberculosa*.

Undoubtedly the microbes of traumatic infection may also, after accidental lesions of the external genitals, get into the tubes of young girls; they may also enter from the peritoneal cavity. I know of a case, a girl of 16, in which an inflammatory disease of the right uterine appendages developed, consequent upon a retro-typhlitis.

My reason for again considering these forms of infectious salpingitis belonging to Groups I and II, in regard to their occurrence in children, is this: there are evidently other infections of the female genital tract which have been observed in children, but which have not as yet been recognized as special forms; consequently they are to be placed in Group III, in opposition to the forms of the two preceding groups. E. Fränkel, of Hamburg, ("*Bericht über eine bei Kindern beobachteten Endemie infectiöser Kolpitis, Virch. Arch.*," February, 1885), and Johann C'seri, Budapest ("*Zur Ætiologie der infectiœsen Vulvo-vaginitis bei Kindern*," *Wiener Med. Wochenschrift*, 1885), describe an infectious disease of the vagina and vulva, the former believing it to be due to a special coccus, the latter to a coccus identical with Neisser's gonococcus.

Hennig (*Krankheiten der Eiliter*, p. 67), in a girl of ten, and Eppinger (*Prager Zeitschrift für Heilkunde*, 1882, p. 36) in an adult, witnessed a dysenteric inflammation extend to the mucous membrane of the genital tract; the disease in its new location assumed the appearance of a diphtheritic inflammation.

Suppuration is sometimes observed in the vaginæ of children suffering from helminthic disease. In these cases the suppuration is not caused by the irritation of the parasite, especially the oxyuris, but by certain microbes carried into the vagina by the parasites. The nature of these microbes has not as yet been sufficiently investigated to allow of their classification.

It has long been known that certain infectious diseases, like typhoid fever, scarlatina, variola, cholera, may invade the genital tract. The local affections are probably caused by the same specific microbes which produce the typical constitutional disease. This, however, still remains to be proven.

At the close of this enumeration, I wish to repeat that in every case where the vagina or uterus is the seat of one of the diseases named, such disease may extend into the Fallopian tubes. I am well aware that I am standing on an unsafe scientific basis regarding my third group of forms of infectious salpingitis. For this very reason I deemed it advisable to group them together, thus keeping them apart from the better known forms; besides, I desired to point out the object which should be kept in view in investigating this subject and in endeavoring to elucidate it still further. It is, finally, self evident, that there are also mixed forms of salpingitis. Different varieties of micro-organisms may enter the tubes, either simultaneously or successively. The forms most frequently found combined are the microbes of the gonorrhœal and tuberculous, and of the gonorrhœal and traumatic infection, and those of the different varieties of the latter.

Every physician whose scientific standpoint is the same as mine will admit that matters regarding salpingitis are immensely more complicated than Lawson Tait imagines, and that it is not sufficient to make an abdominal section, to remove the uterine appendages, and to satisfy oneself with the diagnosis of pyosalpinx in case the tubes are found filled with pus; but that it is our duty, employing all the means furnished by modern science, to endeavor to make an accurate diagnosis of the form of disease affecting the uterine appendages before the operation, and afterwards to add to our clinical observation careful

pathological and bacteriological examination of the specimen. This certainly is a higher standpoint than that occupied by Lawson Tait, to whom the removal of the uterine appendages is the chief thing, and who, neither before nor after the operation, concerns himself with the nature of the disease treated. He admits, himself, that in every fifth case he made an error in diagnosis. In a man like Lawson Tait, so great in his own estimation, it seems rather small to attempt to conceal his ignorance by resorting to insulting and scurrilous remarks in regard to German scientists. I advise Mr. Lawson Tait to learn German and to read the works of German gynecologists: he may then perhaps come to the conclusion that there is much which he might profitably study.

Here in Germany, Lawson Tait is held in high esteem, as he deserves to be, on account of his brilliant practical results. We have long since, however, ceased to regard as serious his theoretical utterances, which pretend to be scientific. The tone which he adopts in his polemic writings does not prevail with us in Germany, and it is certainly looked upon as undignified by every gentlemanly Englishman. I am, sir, etc., DR. M. SAENGER,

Privatdocent at the University of Leipsic, President of the Obstetrical Society of Leipsic.

DR. EDWARD B. WESTON, on presentation of a thesis entitled

METRITIS,

read by the SECRETARY, was elected Fellow of the Society.

DOMESTIC CORRESPONDENCE

ONE OF THE "ITINERANT SYSTEMS" OF RECTAL SURGERY.

Dear Sir:—In a recent number of THE JOURNAL I described the amusing instrumental outfit of the itinerant practitioners upon piles, fistulæ, and fissures. The following is a condensed statement of the oldest of these secret "systems" so far as it relates to rectal ulcers. The information is from a trustworthy source, but I am not at liberty to use the name at present:

Once or twice a month, as the itinerant comes around on his circuit, he inserts his little speculum, cleans out the ulcer, and applies to it a solution of nitrate of silver, 40 grains to the ounce. Between the applications, the patient uses a morning and evening treatment himself. Each morning he is to evacuate the bowels, then inject the rectum with lukewarm water, and finally insert into it a little ointment consisting of 3 grains of carbolic acid and 8 grains of sulphur to the ounce of vaseline or lard.

For evening treatment he uses "Brinkerhoff's Ulcer Remedy," having the following composition:

R.	Extract of hamamelis (distilled)	fl. ℥v.
	Solution of persulphate of iron	" ℥j.
	Cryst. carbolic acid	grs. ij.
	Glycerine	fl. ℥ij. ℥x.

Add half a teaspoonful of this to the same quantity of starch, and about an ounce and a half of water. Inject into the rectum every evening.

This energetic use of nitrate of silver will of itself often cure a fissure, as has long been well known to us. I find, however, that if the ulcer is situated upon the sensitive verge of the anus, as it usually is, the application is atrociously painful, causing suffering equal to that of an incision. I am now experimenting upon the plan of daily unfolding the fissure, washing it out with mild antiseptics, and then packing it with dry iodol. I am not prepared yet to state final conclusions, but there is reason to think that many fissures may be cured in this way without incision, and with little or no pain.

EDMUND ANDREWS, M.D.

No. 6 Sixteenth St., Chicago, February 10, 1887.

COCAINE IN URETHRAL CARUNCLE.

Dear Sir:—In the *British Medical Journal* of January 1, 1887, is a query regarding the use of cocaine in urethral caruncle, as to strength of solution, pain during and after operation, and whether the caruncle is removed by excision or cautery.

In August, 1886, I was called to see Miss W., æt. 16, who had been lying helpless for one month with a urethral caruncle. She was lying on her back with the legs crossed, and unable to move on account of the pain. I applied a 5 per cent. solution of cocaine on absorbent cotton, and having no scissors with me, I trimmed a small twig flat, pushed it up under the caruncle to steady it, and removed the growth with one sweep of my pen-knife. The cocaine acted within five minutes, rendering the caruncle painless, and before I left the house the patient was out of bed and walking about the house. There was no pain during or after the operation, and the hæmorrhage was inconsiderable. Very truly yours,

J. D. EGGLESTON, M.D.

Worsham, Va., February 1, 1887.

INTERNATIONAL CONGRESS.

NINTH INTERNATIONAL MEDICAL CONGRESS. Section IV—Obstetrics.

The attention of gentlemen who desire to contribute papers to the Section of Obstetrics, is respectfully invited to the following extracts from the Rules of the Preliminary Organization:

"Brief abstracts of Papers to be read in the Sections shall be forwarded to the Secretaries of the proper Section on or before *April 30, 1887*. These abstracts shall be treated as confidential communications, and shall not be published before the meeting of the Congress. Papers relating to topics not included in the list of subjects proposed by the officers of the Sections, may be accepted after April 30, 1887, and any member wishing to introduce a topic not on the regular lists of subjects for discussion, shall give notice of the same to the Secretary-General, at least twenty-one days before the opening of the Congress. The titular officers of each Section shall decide as to the acceptance of such proposed communications, and the time for their presentation.

No communication shall be received which has already been published or read before a Society.

"The official languages of the Congress shall be English, French and German. Each paper or address shall be printed in the '*Transactions*' in the language in which it was presented. Preliminary abstracts of papers and addresses shall also be printed in the language in which each is to be delivered. All discussions shall be printed in English.

"All communications and questions relating to the special business of any Section, must be addressed to the President or one of the Secretaries of that Section. As many details of the Congress and numerous appointments of officers are yet to be completed, other circulars will be issued from time to time, as circumstances may demand."

The meetings of the Section of Obstetrics will be held in Washington, D. C., on the afternoons of September 5, 6, 7, 8, 9 and 10, 1887.

PROF. DE LASKIE MILLER, M.D., *President.*
2011 Prairie Ave., Chicago.

W. W. JAGGARD, M.D.,
2330 Indiana Ave., Chicago,
JOSEPH KUCHER, M.D.,
33 East 33d Street, New York,
} *Home Secretaries.*

MISCELLANEOUS.

NEW FOREIGN JOURNALS.—*Revista de Medicina e Chirurgia* is the title of a new monthly journal published in Oporto, 56 Rua de Libertade, the first number of which appeared in January.

Therapeutische Monatshefte is the title of a new monthly journal published in Berlin, and edited by Professor Oscar Liebreich, A. Laugaard, and S. Rabow. The first number appeared in January.

Annales de l'Institut Pasteur.—M. G. Masson, 120, Boulevard St-Germain, announces the journal of this name, soon to appear, to be published monthly, under the editorship of M. Duclaux, with the assistance of MM. Graucher, Chamberland, Nocard, Roux, and Straus.

A PRIZE ESSAY ON HAY FEVER.—At its last meeting, September, 1886, at Bethlehem, N. H., the U. S. Hay Fever Association decided to offer a prize for the best essay from a competent source, preferably a physician, on some question relating to *Æstivis*, or Hay Fever. The amount is necessarily small; but as the accepted essay will be published in the Association's report, when the extent of its circulation, and the character of those whom it will reach, shall be considered, it is thought that the successful treatise will give to its author a reputation worth the effort.

In order to carry out the above the following is announced officially:

1. Subject of the essay, Hay Fever. (a) Its pathology. (b) The predisposing, and the aggravating causes. (c) Advice to the sufferer.

2. The essay not to exceed *four thousand words*, and to be as practical and non-technical as possible.

3. The manuscripts to be received at the office of Samuel Lockwood, Freehold, New Jersey, not later than April 30, 1887.

4. Each manuscript to have a motto under the title, and to be accompanied with a sealed letter containing said motto, also the name and address of the author. These letters not to be opened until after the award is decided.

5. The prize to be $25. The accepted essay to be published immediately in the Association's annual report, one hundred copies to be given the author.

6. The Committee of Award: Samuel Lockwood, Chairman of Committee on Scientific Facts; Frank B. Fay, President U. S. H. F. A.; Charles C. Dawson, Secretary U. S. H. F. A.

CENTRALBLATT FÜR BACTERIOLOGIE UND PARASITOLOGIE.— Dr. Uhlworm, Terrasse 7, Cassel, Germany, the editor of this journal, requests that American authors will send reprints or papers containing their articles on the subjects to which his journal is devoted, directed to his address, as given above.

AN ELECTRIC PRIZE.—A prize of 50,000 francs is offered by the French Minister of Education for a discovery rendering electricity economically applicable in the shape of heat, light, chemical action, mechanical power, transmission of messages, or treatment of disease. M. Bertrand, of the Académie des Sciences, is chairman of the committee of award.

THE HAIRS OF OUR HEADS.—It is said that a German of an inquiring turn of mind and much patience has taken four heads of hair, of equal weight, and counted the individual hairs. A red head was found to contain 90,000, a black 108,000, a brown 109,000, and a blonde 140,000 hairs.

BACTERIOLOGY AND ITS CLINICAL THERAPEUTICS is the title of the general address which will be delivered by Professor Mariani Semmola before the Ninth International Medical Congress.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 5, 1887, TO FEBRUARY 11, 1887

Major Blencowe E. Fryer, Surgeon, ordered to Ft. Lowell, Ariz. Ter. S. O. 29, A. G. O., Feb. 4, 1887.

Capt. L. Y. Loring, Asst. Surgeon, leave of absence still further extended three months on surgeon's certificate of disability. S. O. 29, A. G. O., Feb. 4, 1887.

Capt. Louis Bruhenrin, Asst. Surgeon, granted leave of absence for four months, with permission to go beyond sea, to take effect when his services can be spared by his department commander. S. O. 28, A. G. O., Feb. 3, 1887.

First Lieut. C. C. Barrows, Asst. Surgeon, ordered for temporary duty as Post Surgeon at Ft. Barrancas, Fla., to take effect upon the expiration of his present leave of absence. S. O. 24, Div. Atlantic, Feb. 3, 1887.

First Lieut. Jno. L. Phillips, Asst. Surgeon, leave of absence further extended one month. S. O. 29, A. G. O., Feb. 4. 1887.

First Lieut. Leonard Wood, Asst. Surgeon, ordered to proceed to these hdq'rs and report to the Dept. commander for temporary duty. S. O. 12, Dept. Ariz., Jan. 31, 1887.

THE

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EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

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ORIGINAL ARTICLES.

ABDOMINAL SECTION FOR TRAUMATISM, WITH REPORTS OF FIVE CASES.

Read before the Philadelphia County Medical Society, on January 26, 1887,

BY THOMAS S. K. MORTON, M.D.,

OF PHILADELPHIA.

The term "abdominal section for traumatism" is meant to include those cases where the operator deliberately opens the belly, or greatly enlarges an existant wound for the purpose of discovering intraperitoneal wounds, and, if they are present, repairing them as far as possible, together with more or less final cleansing of the peritoneal cavity. Such cases as those in which wounds of prolapsed viscera are simply repaired, and the parts returned to the abdominal cavity, are not included. My excuse for this paper is, that I have been so fortunate as to be associated as an assistant to more than one-half of all the cases that have occurred in Philadelphia. In four of the cases I have been the assistant, and in three the care taker also. These four cases have been treated in the Pennsylvania Hospital. I had at first expected to read merely the history of these cases, and make a few remarks, but the matter grew so interesting that I determined to make a study of the subject, and I believe that I have canvassed the literature of the world. I must express great obligations to the gentlemen who now permit me to report their cases for the first time, and to Dr. Billings, of Washington, who had translated for me the reports of two Russian cases. I have used the libraries of the College of Physicians and Pennsylvania Hospital, and have found the *Index Medicus* of great service. I have prepared a large table, which contains a mine of information. It represents an abstract of every case which I have been able to find in the literature of the subject.

I shall, in the first place, read a few statistics derived from the table. The total number of cases is 57. Of these, 36 died and 21 recovered: mortality, 63 per cent.

These 57 cases were done by 42 operators, viz.: 23 United States operators did 35 operations, with 11 recoveries and 24 deaths: mortality, 67 per cent. Nine English operators did 10 cases, of which 3 recovered and 7 died: mortality, 70 per cent. Two Australian operators did two operations, with 2 deaths. Two French operators did 2 operations, with 2 deaths. Two Russian operators did 2 operations, with 2 recoveries. One German and 1 Swiss each did an operation, with success. One Italian operator did 2 operations, with 2 recoveries. Seven operations have been done in Philadelphia by 5 operators, with 2 recoveries and five deaths. Five of these have been performed at the Pennsylvania Hospital by 3 operators, with 2 recoveries and 3 deaths.

Of the 57 tabulated cases, 38 per cent. were for pistol- or rifle-shot wounds; 35 per cent. for stabs; 17 per cent. for ruptured bladder, and 10 per cent. for ruptured intestine.

Operations were done according to years as follows: 1862, 1; 1876, 1; 1879, 1; 1882, 1; 1883, 7; 1884, 5; 1885, 13; 1886, 29.

In every case which died after operation, lesions certain to cause death, if uninterfered with, were found. One case of penetrating wound was opened, in which no visceral injury was found; it recovered.

The first case of abdominal section for traumatism was that of Walters, of Pittsburgh, for ruptured bladder, in 1862. The first successful case was the same. The first case after Walters' was that of Heath, in 1876. The first recovery after Walters' case was that of Dr. W. O. Roberts, done for stab wound, August 28, 1882.

The sex was reported in 56 cases: males 52; of this number 33 died, and 19 recovered. There were 4 females, of which number 2 died and 2 recovered. Four were negroes, all males; 1 recovered and 3 died.

The age was reported in 46 cases, the oldest being 58 years, and the youngest 7 years. The ages ranged as follows: One each 7 and 8 years old, both died; 11 between 10 and 20 years, 4 recovered and 7 died; 15 between 20 and 30 years, 5 recovered and 10 died; 9 between 30 and 40 years, 5 recovered and 4 died; 1 each 53 and 58 years, both died; 2 57 years, 1 recovered and 1 died.

The indications for abdominal section for traumatism are in many cases very clear; in others, with only our present knowledge, exceedingly obscure. Taking up the consideration first of wounds, it seems to me that, with what we already know, the operation is clearly indicated in every case where penetration of the abdominal cavity is proven, and with fair surroundings it becomes one's duty to open the abdomen and search for wounds, for there are no omnipresent symptoms which invariably indicate intraperitoneal wounds, even when extensive. With reference to the cases suitable for operation, I would

say that, besides gun-shot wounds, stabs, etc., which have already been operated upon, I conceive that in the future many other traumatic conditions will be subject to interference by section, such as rupture of the stomach, gall bladder, spleen, or kidney, ruptured blood-vessels, various hæmatoceles, etc. Dennis, of New York, had a case in which he opened a penetrating stab wound of the abdomen. He found, besides the injuries, an intussusception evidently caused by the violent peristalsis excited by the point of the knife touching the intestine, and I therefore conceive the possibility of intussusception without wounds. In this paper, no consideration is paid to the effects of traumatism upon diseased organs, such as ulcerated stomach or bowels, or upon the pregnant uterus or its diseased appendages, or perforating typhoid ulcers.

I shall consider the subject of diagnosis as a whole, with the exception of that of ruptured bladder, which I shall take up later. The diagnosis of penetrating wounds of the abdomen is occasionally very easy—occasionally exceedingly difficult. Where there is a pistol shot wound of the anterior wall of the abdomen and a probe can be inserted, or where there is extravasation of fæces, the diagnosis is easy enough. Emphysema is given as one of the best symptoms of perforation of the intestine. I regard it as a poor one. One of the cases occurring in the Pennsylvania Hospital presented marked emphysema of the abdominal walls without injury to the lung or intestine. Injury of the lung may give rise to emphysema, which may be mistaken for that due to a wound of the intestine. Diminution of the liver, dulness due to the escape of flatus into the abdominal cavity is another symptom, but this is fallacious. Shock is usually marked, but in some cases the patient is not at all shocked. Instances are on record where patients have walked long distances, and yet, on opening the abdomen, wounds of the intestines have been found. One man did not even know that he was shot until he had walked some distance to his home—yet he had numerous intestinal perforations. Of course, vomiting of blood and the passage of bloody stools are good signs, but they are not always reliable. The symptomatology of penetrating wounds of the abdomen is very obscure, and we should like to have some light thrown upon it. Of course, a wound through the back is more difficult to diagnose than one from the front, and frequently the diagnosis can only be made by incision. Even where the ball is found lying under the skin, you cannot be sure, for it may have passed around the abdomen. The most interesting class of cases is that in which there has been a blow or injury upon the abdomen and we suspect rupture of the intestine, the spleen, liver, or blood-vessels. These are most difficult cases to diagnosticate, and I predict that in the future we shall open many abdomens in order to determine whether or not these conditions are present.

In regard to the surroundings under which one should operate. In a metropolitan hospital surrounded by every convenience, I think that the majority of cases should be operated upon. In cases where injury to the gut is known to have occurred, and in many cases where it is suspected, it is our duty to operate. In the country and in unskilled hands only those cases which are the most desperate should be operated upon, unless they can be removed to some centre.

If the patient appears to be coming out of shock, he should be allowed to do so as far as possible. Shock from hæmorrhage is, of course, the worst. Where there is extravasation, the shock will be kept up, and under such circumstances etherization and removal of the cause would be the best way to overcome it. The preparation of the patient should be by judicious treatment and thorough cleansing. I shall not now go into the subject of antisepsis or asepsis, although I hold positive views of their great value. Everything should, however, be surgically clean.

Where there is a wound of the anterior wall of the abdomen, first prove perforation by cutting down to the peritoneum. That should be a sufficient warrant for section. In wounds of the back some judgment must be exercised. The incision should, I think, in almost every case be median. In the majority of the cases recorded in the table, and, I think, in nearly all the successful cases, the incision was median. In several instances where section has been done for a special purpose, such as removing an injured spleen, the incision has been made to one side of the median line. In one case of stab wound which I saw, the original wound was enlarged and gave rise to great difficulty in the subsequent steps of the operation. One wound was overlooked in that case, which error, I think, was largely due to the position of the incision. The length of the abdominal wound is to be governed by the circumstances of the case. It may extend from below the ensiform cartilage to the pubes. There is no harm in a long wound if it be properly treated. After opening the peritoneum, note carefully the abdominal contents. If we find fæces, we are encouraged to prolong the search until the wound is found. If there is blood, we should look for the vessel injured. The search for wounds should be thorough and systematic. In most of the cases where wounds have been overlooked, it has resulted from not making a systematic examination. We should begin at the entrance of the œsophagus into the stomach, if it is possible to reach that high, go over the stomach and all the intestines, examine the mesentery, the rectum, and bladder, and look at the spleen. Unless this is done, wounds will sometimes be overlooked, and even with apparently the utmost precaution they will sometimes escape detection. Only those who have seen such cases can imagine the difficulty experienced in finding some wounds, especially when the upper part of the transverse colon and the surrounding omentum are involved. If the intestines are much distended, it may be necessary to puncture them. It is important to remember that extravasation has followed such a puncture, and they should always be closed with a Lembert suture. If the vermiform appendix or an epiploic appendage is injured, it should be excised. In wounds of the intestine, it makes a difference whether the injury is

the result of a gunshot or of a stab. Gunshot wounds are more apt to slough than knife wounds, and where many wounds of the former are located close together, it has been found advisable to excise a portion of the gut including the numerous wounds. Probably a foot of the bowel may be excised without much disadvantage. Six or eight feet have been excised, but in this case the operation was followed by emaciation and death. In such a case it would probably be better to make several excisions. Perforations when found should be turned into the bowel by the suture of Lembert. Wounds of the large intestine and stomach are to be treated in the same way.

Where the ball has perforated the mesentery, the wound edges should be excised. This is the opinion of those who have done most operations. The opening is then brought together with stitches on both sides, or passing all the way through. If the omentum be badly injured, no harm will come from its excision. It may be ligated in various places and the whole cut off without injury. In a hernia case, I cut off what I supposed to be almost the whole omentum, and the man got perfectly well. Where the spleen is wounded, the only method seems to be to excise the organ. This has only been done, so far as I know, twice. Very little is known about the treatment of injuries of the spleen. Wounds of the liver have been met with a number of times and all the cases have died. Whether or not it would be practicable in these cases to stitch the liver to the abdominal wall, etc., I cannot say. Tait has done it in chronic disorders a number of times and has had favorable results. We should be encouraged to experiment in this direction. About wounds of the pancreas little is known—I doubt if they could well be reached. If the kidney is extensively wounded, its excision or complete drainage is indicated. If the ureter is divided, the only remedy is excision of the corresponding kidney. If the projectile has gone through the diaphragm, the same operation as in the case of the mesentery would be indicated, namely excision of the edges and sutures. Of course, all bleeding vessels are to be tied. If this is impossible, the main trunk, even if this be the aorta, must be tied. Wounds of the uterus and appendages have not been dealt with, but would probably require excision.

Then there is another class of wounds entering the abdomen—that is, wounds through the vagina and rectum; for instance, a stab wound through the vagina. If we knew that it penetrated, abdominal section would be indicated. In all these cases contusions or brush burns of the omentum and intestine frequently are found. In time, nearly all of these will slough and give rise to pus. In several cases death has been attributed to this cause. All severe contusions involving the mesentery or omentum should be excised. When they involve the intestine, the peritoneum should be united over them with Lembert sutures. The suture materials which I have seen used have been silk and catgut. I think the latter is preferable if fine and chromicized.

I have one table which gives the average time after injury when the operation was performed. This is one of the most important things that we can consider. The sooner the operation is performed, the better are the chances of the patient. The cases in which the time is reported number forty-five. The average time after the injury for which operation was done, was eighteen and a half hours. Deducting four cases where more than two days had elapsed, the average falls to twelve and a half hours, while a deduction of all the cases where the time was over twenty four hours, brings the figures to nine and a half hours. The average time after the injury when the operation was begun in the successful cases was seven and three quarters hours; the average in the fatal cases was twenty-three and one-quarter hours. These are significant facts. In the five cases operated on at the Pennsylvania Hospital, the average time was six hours. Deducting one case in which from unavoidable circumstances twenty hours elapsed, the average comes down to three hours.

In all cases the question of drainage will arise. It is difficult to decide, in any given case, whether drainage should be employed or not. If there have been extravasation and numerous wounds, drainage seems to be indicated. Glass and rubber tubes have been used with apparently equal success and failure. I think that tubes of glass or other hard material are to be preferred. Where there has been extravasation of the contents of the stomach or intestine, this is usually followed by great oozing of serum.

The final steps of the operation are irrigation and cleansing. In irrigation I believe most thoroughly. It should be very large in quantity and can hardly be too much so. If the patient is shocked, there is no better treatment than pouring hot water through the abdominal cavity. It probably acts directly upon the solar plexus. I have seen this frequently used with marked benefit. The patient will be in far better condition after the use of a gallon or more of water at a temperature of 100° to 110°, than before its application. It has occurred to me that in profound shock from other causes, it might be well to puncture the abdomen with some form of double canula and thus irrigate the abdominal cavity with large quantities of hot water. What shall be put in the solution used for irrigation? Several agents have been so used: Water, distilled water, boracic acid solution, mild solution of bichloride of mercury, and solution of carbolic acid. Carbolic acid should be expunged from the list. Bichloride of mercury, when employed, should be in very dilute solution—1 to 5000 or 10,000. Boracic acid was used in two successful cases in 3 per cent. solution in unlimited quantities. In four cases at the Pennsylvania Hospital the bichloride solution in the strength of 1 to 5000 and 1 to 10,000 was used and apparently without any bad effect. It was used in both of the successful cases there. Distilled water is very good and especially in cases where extravasation has not occurred. Where there has been extravasation, purulent peritonitis set up, or it is not certain that all foreign matters have been removed, I think that an antiseptic is indicated. Where we have a solution like that of boracic acid, possessing fair strength with little danger of poisoning, it should be used.

The parietal wound is closed and dressed in the usual manner.

One question in the after-treatment would arise in cases where a drainage-tube had not been left, and would be with reference to reopening the wound and drainage where a large amount of serum was present. Each individual case must be decided for itself. The onset of violent peritonitis would be an indication for reopening the belly, irrigating and draining it.

I wish now to take up a few of the classes of these cases in succession. Those which have been discussed before will not be reconsidered. Rupture of the bladder will be discussed separately. First, with reference to gunshot wounds. The total number of cases recorded is 22. Of these, 5 recovered and 17 died, a mortality of 77 per cent. Of these 22, 18 were done in the United States; 4 recovered and 14 died, a mortality of 77 per cent. The foreign cases were 4 in number, with 1 recovery and 3 deaths, a mortality of 75 per cent. The first recorded case of gunshot wound treated by abdominal section is that of Dr. Kinloch, of North Carolina, in 1881. The first recovery was the case of Kocher, of Switzerland, in 1883. The first recovery was a case operated on by Dr. Wm. T. Bull, of New York, in 1884. These 22 cases were done by 15 operators—11 American and 4 foreign. In Philadelphia there have been two cases of abdominal section for gunshot wound. One was done at the Pennsylvania Hospital two days since by Dr. Thomas G. Morton. In one case of gunshot wound a wound of the intestine was overlooked, with a fatal result. McKellar, of London, reports a case of two wounds of the lower portion of the sigmoid flexure in which it was impossible to introduce stitches. All that he could do was to throw a ligature around the wounds. The patient died, and fæcal extravasation was found at the autopsy. It struck me that in this case rectal distention by a colpeurynter might have been of some assistance, lifting the bowel up so that stitches could be inserted, for I understand that the openings were on the anterior wall. Such cases are, however, exceedingly difficult to remedy.

I will read the notes of a case of gunshot wound of the abdomen:

Case 1.—B. B., a negro, aged 36, of splendid frame and constitution, was admitted here late in the afternoon of January 23. Three-quarters of an hour before admission, he had been shot by a ball fired not more than a couple of feet from him; its calibre was 32. When admitted, he was not shocked; but slight nausea and severe general abdominal pain, were present. Pulse and respiration slightly accelerated; temperature 98°. A bullet wound was found an inch an a half above and half an inch to right of the umbilicus. No tympany, emphysema, decrease of liver dulness, or other marked symptoms, were present until just before anæsthesia was begun. He then vomited more or less altered blood copiously. Abdominal section had been decided upon by Dr. T. G. Morton over the telephone, and full preparations having been made meanwhile, the operation was commenced almost immediately upon his arrival—an hour and a half after the accident.

The man's condition at that time was very good. The belly wall having been made surgically clean, and penetration proved, an incision was made by Dr. Morton from two inches below the ensiform cartilage to the pubes. Instantly upon opening the peritoneum a large quantity of fluid and clotted blood, together with much flatus and partially digested food and fæces, gushed forth. The peritoneum, where not injured, looked in good condition. The cavity was first cleaned as well a possible by rapid sponging, and then searched for wounds. Three perforating wounds of the stomach first came into view. They were situated in a straight line, transverse, just above the omental attachment, and rather to the left of the centre of the organ. Two were anterior; the third posterior, and came out through the omental sttachment. One other perforation of the stomach was found. This was in the lower edge of the right hand portion, about three inches from the pylorus. All of these holes were bleeding pretty freely, and vomiting gastric contents. The posterior perforation was found only after several careful searches. Next, a linear rent of the transverse colon, just before it curves downward, was found. The tear was an inch and a half or two inches long, and through the omental attachment. All of these wounds were trimmed and sutured with Lembert sutures, of fine chromicized catgut, about an eighth of an inch apart.

The omemtum was terribly torn in a number of places, and filled with very large extravasations of blood, which had become clotted. The clots were removed as thoroughly as possible, and one long rent corresponding to the colon wound was stitched by a continuous suture. A number of ecchymoses of the small intestine and mesentery were found; one of these ecchymoses of the intestine looked as if it would be likely to slough. This was turned in by uniting the serous surfaces of the bowel above it with the Lembert suture. The entire cavity was thoroughly searched, including the liver, gall-bladder, and spleen. The bullet could not be traced after leaving the stomach. The spinal and dorsal regions had been carefully examined for evidence of it there before the operation was begun.

Every portion of the abdominal cavity was then sponged and thoroughly irrigated with $HgCl_2$ solution, 1 to 10,000, and the parietal wound closed without leaving in a drain, and dressed in the usual manner of the hospital. Time from patient's being taken from bed until put back again, two hours. Time from beginning incision to putting on dressing, an hour and a half.

After the operation the patient was somewhat shocked, but in an hour had reacted well, and was perfectly rational. He remained in this condition for four hours, complaining only of slight pain in abdomen. Five hours after operation he presented all the signs of hæmorrhage, and rapidly sank, breathing much interfered with, and no radial pulse. He died in another hour—six hours from the completion of the operation.

Post mortem.—Abdominal cavity contained about a pint of faintly blood-tinged serum; intestines con-

gested; no additional or overlooked wounds found; the repaired ones in good condition and water-tight. Ball, after leaving stomach, penetrated diaphragm, and, without injuring the lung, struck the lower border of the seventh rib three inches anterior to its angle, chipping it and cutting the intercostal artery, which had bled a pint and a half into the pleural sac. The ball was found an inch and a half further along anteriorly in the same interspace.

The only point that I would add is in reference to finding the ball. As a rule, it is not found. In this case we traced it as far back as the diaphragm, and thought that it might have gone through the edge of the spleen, but examination showed no wound of the spleen. The difficulty experienced in finding wounds of the upper portion of the stomach, where the omentum is cut and ecchymosed, is almost beyond description. It is a wonder that some of the wounds were not overlooked.

I will now refer to stab wounds. In all the recorded cases, with the exception of one, the wound was produced by a knife. In that one instance, it was caused by a sharp splinter of wood. As we should expect, these cases present the most favorable showing. The total number of cases reported is 19. Of these, 12 recovered and 7 died; a mortality of 36 per cent. These operations were done by 14 operators, 10 American and 4 foreign. The 10 American operators did 15 operations, with 8 recoveries and 7 deaths. The foreign operators did 4 operations, and all recovered. The first case on record is that of Kwiectuski, of Russia, April 15, 1883. The first American one is that of Dr. W. O. Roberts, operated on August 28, 1885. The first recovery was the case of Kwiectuski. The first American recovery was the case of Dr. Roberts. The credit of the first recovery properly belongs to Dr. Roberts, of the United States, for the Russian operator had a large wound already made, which he enlarged to a certain extent, and sought for the intestinal wounds. Dr. Roberts had but a small opening made by a penknife.

I shall now read the histories of two cases:

Case 2.—G. W. J., æt. 40, a powerfully built man, was admitted to the Pennsylvania Hospital September 9, 1886, at 10:30 P.M. He had been stabbed by a long and narrow butcher's knife a few minutes previously, and had lost considerable blood. Had frightful pain in right side of abdomen; scarcely any shock. Upon examination a wound three-quarters of an inch long was found about two inches above the centre of Poupart's ligament on the right side; through it were prolapsed several inches of small intestine. Dr. John B. Roberts saw him in about three quarters of an hour, and determined upon abdominal section. The operation was begun at once by making a five-inch median incision, strict antiseptic precautions being adhered to. The peritoneal cavity contained a large amount of dark fluid and clotted blood, while the intestines were almost wholly collapsed and empty. The prolapsed bowel was first reduced and then brought out through the operation wound and carefully examined, cleansed, and returned. The entire intestinal canal was thus examined, as were also the other viscera and mesentery.

This research revealed six wounds of the intestine and mesentery, namely: four wounds opening small intestine, one cut opening the colon just above the cæcum and running into the mesocolon, one transfixion of the mesentery.. The wounds of the colon and mesentery were bleeding actively—the former permitted escape of bowel contents. The lesions of the small intestine were occluded by prolapsed mucous membrane. All open wounds were about one-half inch in extent, and were closed with Lembert's sutures of silk. After repairing these injuries the abdominal cavity was most thoroughly irrigated with hot 1:10,000 $HgCl_2$ solution, and then sponged dry. A glass drain-tube was put in as far as the rectovesical pouch, and the parietal wound closed with chromicized catgut. He reacted well, and was perfectly comfortable next day after the drain had been removed, for it caused great pain in the lower pelvic region. Previous to its removal, about six ounces of faintly blood-tinged serum came through it. No pain afterward. Its exit was stitched.

No food was given for three days, but bromide of potash, chloral, and brandy were administered in large doses, as delirium tremens was anticipated. Nutriment was begun on the fourth day, and gradually increased. Delirium then present, and on the increase. On the fifth day he seemed in a fair way to die from the great exhaustion incident to the mania. With Dr. Roberts' consent I determined to give strychnia to physiological effect—regarding that drug as indicated in the profound nerve exhaustion of delirium tremens. One-thirtieth of a grain twice daily by hypodermic was started, and the quantity rapidly ran up until twitching, etc., became manifest. This did not occur until he had been taking one-tenth of a grain every hour, and a half for half a day. The same dosage was kept up for thirty-six hours and then reduced to one-tenth of a grain every fourth hour for another day, as that amount kept up the full effect, since he was becoming more and more sensitive to its influence.

He was thus kept, by smaller and smaller doses, in the full physiological effect of the drug for nine days; at the end of which time ten minims of tr. nux vom. could not be comfortably borne, and the drug was suspended entirely.

The effect upon him of this medicament was very marked indeed, and both Dr. Roberts and myself firmly believed that it saved his life. I have since tried this treatment upon similar cases with exceedingly good result.

Beyond the above his convalescence was uneventful. The belly healed by primary union. He was walking about his room on the fifteenth day, and in the yard on the seventeenth.

Discharged on the nineteenth day.

Case 3.—J. D., an Italian fruit vender, aged 30, was brought to the hospital at 1 A.M., December 25, 1886. He had received a stab during a broil some squares distant from the institution, and had walked all the way. Almost immediately upon receipt of the injury he had vomited the contents of his stomach; not much pain was present, and that little was just around the wound, which was situated two inches

to right, and three quarters of an inch above umbilicus. *Decided emphysema was present* for a space of three inches all around the wound. Temperature, pulse, and respiration normal. He was given a dose of morphia by hypodermic, and slept quietly until morning. There was no odor about the wound, no signs of fluid in peritoneal cavity, no diminution of liver dulness. At that time, 1 A.M., the wound, one-half an inch long, was cleansed, stitched, and sealed with benzine and collodion.

At 7 A.M. pulse, temperature and respiration still normal, but much pain was complained of, which seemed centred about the region of the wound, and was stated to be increasing and spreading every moment. Vomited green material then.

It was decided to do an abdominal section, and at 10 A.M. the operation was commenced by Dr. T. G. Morton.

The original wound was first proved to penetrate —the intra-abdominal opening was not more than one-quarter of an inch long. Median incision was done from two inches above umbilicus to within one inch of pubes, and the abdominal contents searched. A small amount of fluid and clotted blood (℥ss) was found immediately below the stab wound. This blood was mainly entangled in the omental tissues. A rent of one layer of the omentum, about two inches long, was found in this region, also a divided and bleeding omental vessel just outside the tear. The artery was ligated, and the tear sewn with catgut. The peritoneal opening of the stab wound was then closed by a single stitch of the same material. No other lesions could be found, as the cavity was carefully cleansed with sponges, and plentiful irrigation with warm 1 : 10,000 $GgCl_2$ solution, and the external wounds closed with closely placed interrupted fourteen-day catgut sutures. An antiseptic dressing and flannel bandages were applied, and morphia to mild narcotization administered. No drain was used. Strict antisepsis prevailed throughout. Time of operation, one and a half hours.

December 29. The only annoying symptom from which he has suffered has been bilious vomiting from time to time, and which still keeps up in spite of various medicaments and champagnes, of which latter has been taking f℥j every second hour; also has been taking f℥j of peptonized milk every two or three hours since 12:27 A.M. Dressed, because of disordered dressing yesterday, and wounds found united throughout.

Bowels opened last night, and again this morning, by enema. Urine had to be drawn twice following operation. He had no special pain.

January 11, 1887. Up to-day and walking about. All sutures are away. No dressing on wound since January 8.

January 21. Discharged cured; walked home; twenty eight days in hospital.

I will now consider ruptured bladder. The total number of cases reported is 10, with 4 recoveries and 6 deaths, a mortality of 60 per cent. There were 9 operators—3 American and 6 foreign. The American operators performed 3 operations, with 1 recovery and 2 deaths. The foreign operators performed 7 operations, with 3 recoveries and 4 deaths. The first recorded case of abdominal section for ruptured bladder is that of Walters, of Pittsburg, in 1862. This case was also the first recovery. In Walters' case he diagnosed rupture of the bladder, with infiltration of the peritoneum with blood and urine. He opened the abdomen, cleansed it out, and put in a drainage-tube, but did not sew the bladder wound. The second case was that of Alfred Willits, of London, operated on June 12, 1876. This case died. The second American case was that of Dr. Bull, operated on October 27, 1884. This case also died. Two recoveries have recently been reported by MacCormac. Philadelphia has had one case which was operated on by Dr. Joseph M. Fox, August 16, 1886, with fatal issue. I will read the report of this case.

Case 4.—E. M., a man aged 38, at 1 A.M. on August 16, 1886, walked out of a second story window. Two and a half hours afterward he was admitted to the Pennsylvania Hospital. He had been drinking much the previous evening, and the bladder was distended at time of accident. Upon examination, the resident surgeon, Dr. Alexander McAllister, found that the neck of one femur was fractured, and that he had marked symptoms of ruptured bladder, namely, great pain over bladder and lower abdominal region; intense desire, but no power, to micturate; bloody urine by catheter. He was much shocked, but had recovered by 9 A.M., when he was in good condition. Dr. Fox at that time saw him, confirmed the diagnosis, and determined to operate, but through the intervention of circumstances beyond his control was prevented from so doing until evening, when the operation was performed.

Strict antisepsis prevailed. A four-inch median incision was made over the bladder. Ten ounces of blood and urine were found in the peritoneal cavity. Intestines congested, and in places looked almost gangrenous. A 2½-inch triangular opening was found in the anterior portion of the fundus. The viscus was held up by two long sutures passed through the sides of the rent, and the wound was then sewed with closely placed Lembert sutures of catgut; fifteen were introduced. It did not leak when distended with 1 : 1000 $HgCl_2$ solution. The abdominal cavity was then thoroughly washed with 1 : 5000 solution, the parietal wound closed, leaving in a bone drain-tube down to the bladder; but, of course, not entering that organ. A rubber catheter was left in the urethra. He died in forty-two hours.

Post-mortem examination showed localized peritonitis about wounds. Wound of bladder water-tight. Blood clots in pelvic basin.

Now a few details with reference to ruptured bladder: The symptoms of ruptured bladder are more definite than those of most other cases. The condition of the bladder at the time when the injury is received is of some importance, but cannot always be ascertained. Shock is usually present, as in other cases. Pain in the hypogastrium, fruitless efforts at micturition, vomiting, hiccough, distension of the abdomen with fluid, the withdrawal of blood or bloody urine by the catheter, are all good indications. If

there is no urine in the bladder, or none comes in, it is a fair sign. The catheter can sometimes be introduced to a great length, and occasionally the rent in the bladder wall may by this means be detected. The withdrawal of an enormous quantity of fluid is another indication. If warm water is injected, it may be felt by the patient in the loins and other locations. With the catheter in the bladder, the liquid sometimes ebbs up and down with the movements of respiration. Recently Dr. Weir, of New York, has suggested a test for ruptured bladder, which consists in injecting a certain amount of fluid and percussing over the region of the bladder. If a definite outline of percussion dulness is noted, it is a fair inference that the bladder is not ruptured.

It is important to determine whether the rupture is extra- or intraperitoneal. Stephen Smith has shown, in a collection of 65 cases, that the peritoneum is injured in 80 per cent. of the cases. Max Bartles found, in an examination of 166 cases, that the rent was intraperitoneal in 98, and extraperitoneal in 54. In 84 cases of intraperitoneal rupture the rent was situated in the fundus in 40 cases; in front, near the fundus, in 9; posteriorly in 33; and at the side in 2 cases. In 50 cases of extraperitoneal rupture, the rent was at the neck in 19, anterior in 23, posterior in 2, and at the side in 6. In 15 of these cases there was fracture of the pelvis. In these cases, as a rule, the urine found in the peritoneum is healthy, and not decomposing. An interesting paper has been published by a Russian, giving the toxic effects of urine which has escaped into the peritoneal cavity.

The method of operating is an interesting one. Having determined upon interference by section whether the diagnosis has been made positive or not, a median incision should be made and enlarged to suit the convenience of the operator. The incision may at first be made down to the bladder, as for a suprapubic lithotomy. If there is a wound in front, you may feel if it enters the peritoneal cavity; but even this is fallacious. Having found the wound in the bladder, the first thing is to clean the peritoneal cavity. Next, it is necessary to get the bladder into a position to suture it. This has been, until recently, found one of the most difficult steps of the operation. To obviate this, distension of the rectum with a colpeurynter has been practised. More recently, as in the case of Fox, sutures have been introduced on either side, and may be combined with the use of the colpeurynter. MacCormac, who found considerable difficulty in bringing up the bladder, made a lateral incision on each side through the peritoneum. This liberated the bladder immensely. These peritoneal wounds he stitched together in the usual way, but it appears to me that this might be improved upon by introducing the stitches as Dr. Emmet does when sewing up his relaxation incisions of the vagina or elsewhere—that is, by uniting the wound by stitches passed in its longitudinal diameter. It has been found that the cases in which the sutures penetrate all the coats of the bladder invariably terminate fatally. This must be borne in mind, and the sutures passed only through the serous and muscular coats. The bladder wound is to be brought together with Lembert sutures of silk or catgut.

The after-treatment brings up the question of drainage, which has been discussed. A catheter should be left in the bladder. Another important thing is to prove that the stitches effectually control the opening in the bladder. This is done by injecting some solution—better, a weak antiseptic solution—into the bladder. If there is any leakage, additional sutures should be introduced; or the first row of stitches, by a second set, turned in.

The last division of the paper relates to rupture of the intestine. The total number of cases reported is five, of which number none recovered. One operation was performed in America and four abroad—two in Australia, one in France, and one in England. The first recorded case is that of F. H. Girdlestone, of Australia, February 14, 1883. The only American case recorded is that of Dr. E. A. Wagner, on August 2, 1886. One case fell, and pressed a truss down upon a descended hernia; one was thrown from a horse; two were kicked in the abdomen; and one was crushed by a horse. In five cases the small intestine was ruptured, and in one the colon was the part involved. I have the notes of one case of ruptured intestine which occurred in my father's wards in the Pennsylvania Hospital. I wish, in conclusion, to relate it, though it was not an operative case.

Case 5.—B. R., aged 57, was brought to the Pennsylvania Hospital, a distance of ten miles, on a bitter cold night, sitting in an upright position. Upon his arrival he was in a state of collapse from exposure, cold, pain and weakness. He stated that he had long been subject to a hernia (indirect inguinal) of the right side; that he habitually wore a truss that did not keep it reduced properly; and that while it was down, about thirty hours before admission, he had been violently kicked in that groin. He experienced some pain and nausea at the time, and both steadily increased up to the time of his admission. His bowels had not moved.

Upon admission his condition was as above; no vomiting or belly pain. A large swelling was present along the proper position of an indirect inguinal hernia. In this lump he had severe pain. All endeavors were directed to bringing him out of his shocked condition.

December 3, 1886. Late last night he had reacted sufficiently to receive an anæsthetic, which was administered, and a thorough examination of the affected region made. No hernia was present; simply a mass of inflammatory exudation. Considerable emesis and some recurrence of shock followed. This morning his condition seemed fair. He stated that he had none or very little pain; took liquid nourishment; and had his bowels freely moved by enema; *no abdominal symptoms whatever.*

In the afternoon he vomited several times, material with a suspicion of fæcal odor about it, and during the night it became very markedly so. It now became evident that he was suffering from one of three conditions, namely, either a ruptured gut, a reduced though still strangulated hernia, or an intussusception.

4th. The first thing this morning preparations were made for opening the scrotum, and, if necessary,

the abdomen; but the anæsthetic so depressed him, and his condition within the last few hours had become so bad, that the operation had to be abandoned. He died in the course of a couple of hours.

Post-mortem.—Upon incising the scrotum a quantity of fæcal material was found; no hernia was present, but the internal ring was patulous. The peritoneum was found in a state of general peritoneal inflammation, and a great quantity of fæcal fluid material was present in the pelvic basin. A loop of small intestine, having an inflammatory ring about its neck, was found in a state of almost gangrene, from congestion and inflammation; while the loop was torn for an inch in extent in two places; the communication of the loop at both ends with the normal bowel was present, though the opening was small. Post-mortem examination otherwise negative.

HYDROPHOBIA (RABIES CANINA); FATAL TERMINATION.

BY HORACE P. STEBBINGS, M.D.,

OF ENGLEWOOD, ILL.

On Wednesday, October 20, 1886, at 4:30 P.M., I was called to see Daisy I., who had been bitten by a dog. Some one who saw her afterwards said there were thirty-five punctures: one wound on the back of the neck, one in front of left ear, one above left clavicle, one on the left leg, and the others on forearms and hands. All the wounds were cauterized with a 25 per cent. solution of nitric acid except one on the left leg, where lunar caustic (fused nitrate of silver) was used, as the wound was superficial, merely a scratch, and one above left clavicle to which a 95 per cent. solution of carbolic acid was applied. Extreme pain caused by the nitric acid was the cause of the deviation from the rule in the case of the two wounds.

The wounds were seen by me ten minutes after they were made, I am told, and work commenced on them immediately. An ordinary drop-tube was passed to the bottom of the punctured wounds and the liquid forced out of the tube until it ran over the skin about it. The wound in the skin above the clavicle was not discovered until two hours later, as the dress was untorn, it probably having been made by a claw. When seen it was treated with the 95 per cent. sol. carbolic acid as stated above.

The shock was profound, and ¼ grain morphine (sulph.) was administered by the mouth, and the girl put on a couch to rest, the wounds being only loosely covered and not dressed.

Wednesday evening.—Wounds were dressed with carbolized vaseline, then manilla paper, and roller bandage. She was much quieter, had been asleep, and was resting pretty well. Slight febrile movement.

October 21, Thursday morning.—Had passed a pleasant night; muscles very lame and wounds sharply inflamed, indurated and red, but the inflammation closely circumscribed. Wounds dressed as on night before.

Thursday night found Daisy restless and worried, for a man, a doctor, she guessed, had removed all the bandages and counted the wounds. Whoever it was failed to replace the dressings, and the lady had put them back very nicely, but the dressings had become harsh when removed and had acted as irritants until reapplied. She is having too much company. Was glad to have her wounds redressed. Added iodoform to two wounds that showed signs of suppurating. Prescribed

Tinct. ferri chlor.	
Acid phosphor. dil. āā.	℥j.
Quiniæ sulph.	℥ij.
Aquæ q. s. ad	℥iv.

directed one teaspoonful in water after each meal, also one compound cathartic pill (U. S. P.) for torpid condition of bowels.

October 22, Friday morning.—Bandages again in part removed; several wounds suppurating and looking well. Neck very lame from wound on back of the neck and the one in front of the ear. Lymphatics below this latter wound indurated and swollen. No motion of bowels yet obtained, so directed another compound cathartic pill to be taken unless a movement should occur spontaneously by noon; for inaction of kidneys, directed a mixture of spts. alth. nitros., liq. ammonii acetatis and potas. nitratis. Iodoform used on all wounds at first sign of suppuration.

Friday evening.—Bowels had moved and kidneys doing excellent work without the need of medicines of any sort. Wounds in excellent condition, and redressed with carbolized vaseline and powdered iodoform.

October 23, Saturday morning.—Tried to see a turgid condition in some of the wounds and penciled a 25 per cent. sol. of carbolic acid around some of the wounds, and redressed as before. Eating soft foods, broths and soups, as wound in left masseteric made movements of the jaw very painful.

Saturday evening.—Applied two "madstones," one green one about two-thirds as large as a hen's egg and flattened on one side; one red, looked like pipestone and had a clayey odor; this one was about half the size of a hen's-egg, irregular in form with one flattened surface, and showing bright fractures. Both stones were finely porous and adhered to any moist surface as it did to the back of the hand moistened with saliva. The stones were covered about with absorbent cotton, so as to render the wounds to which they were applied free from contact with atmospheric air. The stones were tolerated by me because family and friends all worshiped this "fetich," and the feeling of "cure" was in every mind after their use. Consent was easily obtained that no reference be made to the circumstances of the injury, to the time, nor the name of the dread disease be mentioned.

October 24 Sunday morning.—The green stone glued to dried pus at the orifice of wounds, the red one loose. The stones draw, *i. e.*, by capillary attraction produce a sense of suction and leave the wounds stimulated by their harsh feel and movement. The same dressing renewed.

Sunday evening.—Stones removed and boiled; one reapplied, the other allowed to dry during the night. Wounds redressed as before, all of them looking well.

October 25, Monday. — Wounds redressed and stones applied to any indolent-looking sores, as their presence satisfied friends and patient. Daisy had "caught cold," was sneezing badly, hands and feet cold, bowels torpid. Gave

Tinct. opii camph	℥ss.
Tinct. aconit. Rad	♏xv.
Tinct. digital	℥ij.
Aquæ chlorif	
Aquæ ää q. s. ad	℥iij.

Take 1 teaspoonful for a dose four times daily; also one compound cathartic pill (U. S. P.)

Monday evening.—Cold did not trouble her; circulation restored, and functions all perfect so far as known. Wounds doing well and redressed as before.

October 26.—Tuesday forenoon stones boiled, dried and reapplied. Wounds redressed as before.

Tuesday evening.—Wounds redressed as before.

October 27.—Wednesday morning and evening nothing to record.

October 28, Thursday.—Because of a little restlessness the iodoform was discontinued and impalpable boracic acid used in its stead. Otherwise everything as before.

Thursday evening.—Slight fever, but cake and cheese account for it. At the request of the gentleman at whose house she was given a home, I spent the day in another room without her knowledge. To day she drank five or six pints of water. Wounds looking finely.

October 29.—Spent the day at the house dressed the wounds in the forenoon as on the 28th. A diphtheritic membrane that appeared on a few wounds was destroyed with lunar caustic and in part removed. At noon she was left sitting up with the servant girl alone in the house. Seized the opportunity to eat cheese, cake, a large amount of butter and two or three ounces of syrup. Dressed her wounds on my return, and of course there was considerable restlessness and fever, but this was controlled by the mixture given on the 25th. Itching of wounds to day and yesterday, relieved with creosote water diluted to four times its volume. Uneasiness seemed to be due entirely to a healthy reparative process. In the evening her friends were worried, and desired me to call in Dr. C. H. Whitman to consider the question of removal. Wounds redressed dry with iodoform and absorbent cotton. We could see no reason for her removal, but desired the family to carry out their wishes. They concluded to remove her to St. Luke's Hospital, Chicago.

October 30.—Her wounds, which were almost all healed, were dressed dry with iodoform, as on the previous evening, and she was taken in a closed hack five miles to the hospital.

She remained at the hospital one week, during which time her symptoms were negative. The first day after her ride and getting her in bed.—"Pulse 82, temperature 99.2° F.; no pain, bowels moved. At night homesick. Appetite fair, quiet." Next day, October 31: "Temperature normal, slept fairly well." Next day, November 1: "Up all day; no pain. Bromidia ℥j nightly for sleeplessness."

Until Sunday, November 7, there is no further history, no symptoms to be recorded while under the most careful observation, and she was discharged and recorded cured; which means, I suppose, that her lacerated or punctured wounds were healed so far as to be out of danger of sepsis. On looking over her wounds she called my attention to a pimple on her left arm, exactly like several that had appeared on the back of her neck and elsewhere under the vaseline dressing, some of which I had incised. There was no infiltration or infection apparent. Until Thursday, November 11, there is no further history, and nothing of interest that can be recalled by the family.

Thursday evening, November 11, 1886, 8 P.M.—Dr. C. H. Whitman was called in to see Daisy I. Temp. 102° F., pulse 100, hard and strong, skin hot and dry, tongue slightly coated white, pupils slightly dilated. Pain in the lumbar region extending down sciatic nerves; or, as she expressed it: "My back aches and my bones ache down my limbs," making a motion down over lower part of back and down back of thighs. Prescribed of the following:

R.	Tinct. aconit. rad	gtt. x.
	Fld. ext. asclepias tuber	℥ij.
	Glycerini	℥ij.
	Water q. s. ad	℥ij.

℥j every hour.

also quinia sulph., 5 grains every four hours.

November 12, Friday, 6:30 A.M.—She had slept very little during preceding night; had been very restless. Temp. 102.5° F., pulse 110, tongue not much changed, pupils less dilated, bowels moved naturally. Urine passed about normal in quantity, of a greenish-yellow color, and with an abundant flocculent sediment which appeared soon after it was voided. A fuller account of the analysis of the urine is appended. To-day the wounds were first complained of, the new cicatricial tissue reddened, and the sites of two healed wounds broken open and discharging pus (the wounds were the one on the back of the neck and one on the left forearm). Complained of extreme pain in one of the knee joints, and there was now developed a general hyperæsthesia. To meet these indications morphine in ¼-grain doses was given every five hours until three doses had been taken, and iodide of potash was also given.

1 P.M.—No alteration.

4 P.M.—Difficulty in swallowing, and slight spasm and inharmonious action of constrictors of pharynx first noticed.

7:30 P.M.—Slight fulness of face and pallor. Temp. 100° F., pulse 90, tongue bright red (tongue of inflammation). Wound in front of left ear became painful. Hydrochlorate of cocaine gave relief. At this time and until midnight morphine alone was used. After midnight there was a troubled sleep until morning.

Saturday, November 13.—Was called at 8:30 A.M. by Dr. C. H. Whitman to see patient. Drs. Lovewell and Wilder, of this place, were also called. Found her with face bloated and pallid. She recognized me, but feared to allow any one to approach her; said it "strangled her." Abscess on left arm, areola the size of a silver dollar and a drop of healthy-looking pus

at its summit. Bite in neck aches, also the one above the left clavicle. Spasm of respiratory muscles and those of deglutition on movements toward her or when a breath of wind was felt. Wants people to approach her from head of the bed, as movements from that direction (which she does not see) do not trouble her. During forenoon commenced the use of chloroform by inhalation, which could only be used very much diluted with air because it burned her throat, as she said, and her eyes. Pulse 100, pupils normal, but once or twice momentarily very much dilated. A handkerchief was allowed to rest on the eyes, to remove all excitement caused by sight, but the moment it touched her cheek it was jerked violently away. While the handkerchief was in place the chloroform was urged a little, and 1/6 grain of curare was injected hypodermatically, she not being aware of the operation. On awaking she is unable to swallow either water or ice.

2 P.M.—Patient unchanged, except a little less excitable than in the forenoon. Wants to take the cloth in her own hand and smell the chloroform, which she is allowed to do.

Towards night, between 4 and 5, she was able to drink some water through a flexible tube, the glass being held three or four inches from her face, and she even wanted to hold the glass herself. Drank about + ℥iij, to her infinite delight, after which she felt much relief. There was some choking, but she persisted in the effort until the water was swallowed. She then submitted to another subcutaneous injection of curare (1/6 of a grain). Has taken no food; pulse 100.

November 13, midnight.—Daisy rests in comparative comfort, otherwise as excitable as ever, and allowed to remain alone, as the presence of any one makes her want to talk, and then she becomes excited and nervous. Has her cloth wet with chloroform and placed on a chair at her bedside, then she says: "now go out and I'll get it myself," and repeatedly cautions "don't fan so." At 1:30 A.M. was helped upon a chamber vessel and passed urine with a great vesical spasm; when helped back into bed she seemed very much exhausted by the effort of moving, although a lady and myself lifted nearly all of her weight. At 2:10 A.M. she made two violent attempts to clear her throat of thick sticky mucus. At 2:45 A.M. restless again and given more chloroform on her cloth, and is quieter again.

Here my notes of the progress of the disease were interrupted by her constant demands for assistance and care.

At midnight Saturday night I put on my heavy dogskin gloves and wore them constantly, for frothing had commenced, and she said to the lady who gave her a home: "Be careful, Mrs. D., for I might bite you. I wouldn't want to, but maybe I couldn't help it." Between 2:45 and 3 A.M. efforts at vomiting commenced, but only frothy mucus was thrown up. Afterwards came brownish and brownish-green matter, apparently from the duodenum. This was expectorated into a wash-bowl without violence, not more than two drachms at a time, and contained a finely curded or granular matter, undoubtedly bile.

Typhoid fever was prominent in her mind as the cause of her illness, and she asked many questions about it and if she had it. I assured her that she had, and also that I could break it up in a few days, as she was worried for the expenses of her illness to her friends.

Every movement, however deliberately it was commenced, would be finished with a jerk. There was perfect sanity whenever her mind was recalled by impression of any of the senses, but when left alone there would be a little low, busy delirium, talking to herself and low exclamations. Hearing was very acute, as were sight and feeling. The sight of the movement of a garment would cause her to exclaim "Don't fan so," before a wave of air had time to reach her, and her own breath on her hands, as they lay across her chest, caused her to complain of draughts.

From about 3 o'clock Sunday morning until death there was constant accumulation of carbonic acid gas in the blood, for there would be spasm of the epiglottis after a shallow inspiration, and the continued retching demanded more oxygen. The skin was of a dusky hue and wrinkled. In this condition, and about an hour and a half before she died, she was able to chew and swallow a little plain, soft wheat bread, and she took a little diluted fluid beef well salted; but although she liked its taste, the stomach promptly returned it. When she died there was slight spasm of the throat and chest, probably wholly of the epiglottis. There was no general spasm, and her mouth was left full of froth.

Of remedies after the development of "rabies" morphine accomplished next to nothing. Chloroform (Squibbs) gave great relief and was called for constantly. Very little was inhaled, but not much was needed. About 1½ lbs. was used in twenty hours, her attendants getting as much as she did. Curare (Merck's), while producing physiological effects, at one time numbness in one leg, and afterwards in both forearms and hands, but no further, doubtless avoided many violent spasms.

She was humored in every desire that could be fulfilled, and where it was not best for her she was satisfied with that assurance. No restraint was offered. Once a physician holding her hand and wrist lightly in his hand, did not instantly drop it when she jerked, and she glared at him, truly insane, mad, wild for the moment: "You are trying to hold me." I assured her that we would do no such thing, and she lay back in a moment soothed and quiet. She was of strong frame, well developed for her age, 15 years old, born and reared in a country town; had never menstruated; of very unusual will power and control of nerves. Mentally she was not balanced perfectly, *i. e.*, older in some regards than others, and otherwise there was a little bias.

No blebs were noticed about tongue or lips.

No post-mortem examination was held.

Examination of Urine, by Dr. Chas. H. Whitman. —Color, a greenish yellow. On cooling a white precipitate let fall, which cleared up upon boiling, also with nitric acid; this precipitate occupied one-fourth the volume of the urine. Reaction acid. Specific

gravity 1.028. *Albumen*, none. *Sugar*, none. Microscopic examination found one granular tube cast from straight uriniferous tubules, also a few epithelia from pelvis of kidney, some epithelium from bladder and some from vagina. Further than this there was found only the normal inorganic substances, *i. e.*, amorphous urates, urate of ammonia, urate of soda.

5730 Wentworth Ave., Dec. 10, 1886.

THE HEADACHE OF YOUTH AND ITS RELATION TO OCULAR DEFECTS.

BY CHARLES F. SINCLAIR, M.D.,

OF CHICAGO.

The subject of my paper is rather the relation of certain common forms of defective vision to headache in youth. The subject in general would take us over the whole field of ophthalmology, and is too vast to treat even superficially in the space allotted to my paper.

The headaches arising from defective vision are so numerous, and show such definite characteristics in connection, not only with the different forms of ametropia, but with its different degrees, that the ophthalmologist might easily furnish a terminology of his own. Instead of the usual classification into sympathetic, neuralgic, anæmic, hyperæmic, etc., another division, based solely upon the condition of the eye, might be made. This might be done, too, without regard to any faulty condition of the general system through which these errors of refraction, in many cases, first manifest themselves. And this is true especially in youth. There are headaches with certain definite characteristics which are caused not only by hypermetropia, but also by its different degrees, as there are of myopia and its different degrees. These fixed peculiarities are still more marked in the different forms of astigmatism. The severity of the pain seems in some measure to depend upon the nature of the ametropia, ranging from the dull, heavy ache in and around the eye found in the lighter degrees of hypermetropia and myopia, through the severer forms found in the higher degrees of these refractive errors, and in simple and compound astigmatism, to the intense neuralgic pain of that rare form of defective called mixed astigmatism. This latter pain may be of such severity and of so frequent occurrence as to destroy the usefulness of the life of the individual.

Such a case as this came under my care in February last, and, although somewhat of a digression, I shall take the liberty of presenting it. This patient was a young woman of 30 years of age, apparently healthy and strong. Her only complaint was about her "terrible head trouble." She had been troubled with her eyes since 10 years of age. When at school, if the sun shone brightly, she could not read her lessons, and would have to press and squeeze her eyes in order to see at all. About seven years ago her eyes were in such a condition that she could not look at any bright object, or use them for any ordinary work for months at a time. Since she was 15 years of age she has had terrible headaches in the forehead and temples, and in and around the eyes. As she stated, the pain is so intense it almost drives her mad. She can not even ride in a street car for fear the "neuralgia," as she termed it, would start up again.

These severe headaches were accompanied at times with nausea and vomiting, and these she called her "bilious attacks." At other times her "eye headache" came, when the pain seemed to be in and at the back of the eye, and which pressure relieved. At still other times the pain was located at the base of the nose, and these she called her "catarrhal headaches." In all, however, the pain in the eyes was severe. For fifteen years she has had these severe attacks regularly twice a week. They last sometimes a day and a night, and sometimes two days and two nights. She has taken medicine for biliousness and dyspepsia, and every patent medicine she could hear of for her catarrh. She has a large safe at home full of medicine bottles. Her house looks like a drug store. She has exhausted the whole pharmacopæia for lung and liver and stomach and throat troubles, and now, as a last resort, she comes to see if her eyes can be in any measure the cause of her suffering. On examination I found vision very defective, being but $\frac{2}{10}$ in the left eye and $\frac{4}{10}$ in the right. Plus and minus glasses were refused. The ophthalmoscope showed the usual distorted appearance of the disc seen in astigmatic cases, with a moderate degree of myopia in the vertical meridian, and of hypermetropia in the horizontal of both eyes. A lense of — 1.50 D spherical ⊖ + 1.50 cyl. axis vertical in the right eye, and of — 2. D sph. ⊖ + 1.75 D cyl. axis vertical in the left, improved the vision up to $\frac{7}{10}$, and apparently has cured the headache.

But it is especially in childhood and youth that these different forms of ametropia manifest themselves in all the various forms of headache. In a comparatively recent and voluminous work on the "Nature and Cause of Headache," by Wm. Henry Day, of London, a lengthy chapter is devoted to the consideration of the headaches of youth. He deplores the popular methods of education which push a child forward in the acquisition of knowledge without sufficient regard to physical training; "to the vigorous growth of the body and the stability of the frame, until some one link is broken in that mysterious chain of vital force which keeps the whole fabric in order, when the health in too many instances is undermined and life is absolutely shortened."

To one familiar with the intimate relation existing between the headaches of youth and ocular defects, and how, with the school boy and girl, all too frequently the eye is the link which first gives way, it seems strange that the author of such a work should in no instance mention ametropia as a possible cause, not alone of the severe headaches of childhood, but also, through reaction, of deterioration of the general health.

There is, however, one form of ametropia to which, on this occasion, I wish especially to refer, and which is exceedingly common among our school children. It is of slight degree and therefore easily overlooked. Indeed, it may simulate some of the less severe forms

of ametropia, and although these refractive errors may be but slight, yet they may be the cause of various forms of severe headache and of impairment of the general system. I refer to those cases of myopic and hypermetropic astigmatism of .50 D and .75 D. In these cases, for some reason as yet unexplained, the resulting disturbances are much more wide-reaching and serious than in the more common and simpler forms of ametropia.

The following cases will best illustrate the peculiar characteristics of these forms of abnormal refraction:

Case 1.—Maud W., a school girl, 14 years of age, has had severe frontal headache, and occasionally in the occipital region, almost daily for three years. It is usually, however, a severe throbbing pain through the temples and across the forehead. The severity of the pain is so great that she is frequently confined to her bed for days at a time. The headache is sometimes accompanied with nausea. These headaches became finally so frequent and severe that she was obliged to give up all her studies. Nothing during these years of suffering called particular attention to the eyes, but at last she noticed that the eyeballs were sometimes tender to the touch, and that the attacks usually began with slight lancinating pains in and around the eyes.

On examination excellent vision was found, being $\frac{9}{10}$, with some some few letters of $\frac{1}{10}$ for distance. With minus lenses of .50 and .75 of a dioptric vision improved to such an extent that $\frac{1}{10}$ was read with ease. After, however, the accommodation was paralyzed by the use of homatropin a half a dioptric of hypermetropia was found in the vertical meridian, for which a plus cylinder was prescribed, and no further complaints were made of the severe headache with which this patient had suffered for three years.

Case 2.—Emily R., 15 years of age, has had headache for a whole year, every day and every night. The pain at first was rather of the nature of a dull, heavy ache in the temples and forehead. This gradually increased in severity and extent until at times the whole head seemed numb. Two weeks before examination this dull ache turned into a sharp, throbbing, lancinating pain, shooting up through the temples and around the head toward the occiput. There was tenderness on pressure around the orbit, and especially over the supra orbital nerve. The eye-balls were also tender to the touch.

I mention this case for the reason that ordinary plus glasses were first prescribed, these permitting the patient to read $\frac{1}{10}$ with apparent ease. The patient, however, returned in a few days saying her headaches were as bad as ever. Here also, after the accommodation had been thoroughly paralyzed, a small degree of hypermetropic astigmatism was found which a × .50 D cylinder corrected, entirely curing the distressing head symptoms.

The important part these slight irregular forms of ametropia play in the headaches of youth is clearly seen in a case which came under my observation two weeks ago, in which but one eye was slightly astigmatic, the other possessing 1.50 D of long sight.

Case 3.—Lily L. has been troubled with her eyes for a year and a half. Patient looks delicate and anæmic, appetite is poor, has been very much troubled with headache—a dull, continuous ache over the frontal region, with sometimes throbbing and at other times sharp lancinating pains shooting out over the left side of the head from the left eye. During the time this patient attended school these peculiar headaches were of daily occurrence. In vacation they were absent. She is much troubled with constantly recurring attacks of vertigo and dizziness. While walking the streets these attacks are liable to come at any moment, when she is obliged to grasp some object to keep from falling.

The greater severity of the symptoms on the left side of the head seemed to find an explanation in the fact that the usual small amount of astigmatism was found in the left eye, the correction of which has apparently put a stop to both the headache and vertigo.

These are but types of, in my opinion, an exceedingly large number of cases where the most distressing symptoms, simulating, in many instances, even organic disease, may be quickly and thoroughly cured by so simple a remedy as a pair of properly adjusted cylindrical lenses. They are interesting to the ophthalmologist, as they may assume in certain cases not only the characteristics of myopia or hypermetropia, but even of normal vision; and they certainly suggest, to the general practitioner the advisability, in every case of severe or persistent headaches in youth, that not only the eye be carefully examined, but that it be examined only when thoroughly under the influence of some mydriatic.

MEDICAL PROGRESS.

HYPODERMATIC INJECTION OF FOWLER'S SOLUTION IN CHOREA MINOR.—To fairly test the value of hypodermatic injections of Fowler's solution of arsenic in the treatment of chorea minor, especially as compared with its internal administration, almost all cases of this disease admitted during the last year to St. Anne's Hospital for Children, in Vienna, service of Prof. Widerhofer, have been subjected to this treatment. For the sake of comparison a few cases were treated by Fowler's solution given internally. The results of the clinical experiment, which have been highly satisfactory, are detailed by DR. FRÜHWALD, assistant to Prof. Widerhofer, in the *Jahrbuch für Kinderheilkunde*. Equal parts of Fowler's solution and distilled water were used; care was taken to have the preparation fresh, and to have it freshly filtered before injecting it. One injection was given a day, alternately into the extremities, the needle being inserted deeply into the tissues and the surface having been well washed with thymol water. Treatment was begun by injecting up to the first division mark of a Pravaz syringe, the dose was increased day by day by one additional part until eight or ten such parts were reached, and then as gradually reduced until the original dose was again attained. In increasing the dose attention was given not only to the age of the patient and to the severity of the disease, but more

especially to the signs of improvement that became manifest.

In those cases in which the remedy was given internally the initial dose was 5 drops per diem; this was increased by one or two drops a day until 20 or 25 drops were reached, when it was as gradually reduced to the first dose. Of the twenty-five cases, almost all of which came under treatment at the height of the disease, twenty-two were treated by injection, three by the internal administration of Fowler's solution. There were eighteen girls and seven boys, aged from 5½ to 14 years, all of feeble constitution, anæmic, and of irritable disposition. As to cause, fright or some other psychical disturbance brought on the disease in nineteen, two were relapses. Only in four could a relation be traced between acute rheumatism and the chorea. At first, in three cases, redness of the skin at the punctures, and in two of them abscesses, developed, and these were subsequently treated by internal medication; but afterwards, when the injections were carefully made in the manner described above, no troublesome complications further set in.

As to the curative results obtained, both physicians are compelled, from their experience with the two ways of giving the arsenic, to give decided preference to the treatment by injection. Where it was employed pronounced improvement set in in a remarkably short time (one to two weeks), and a permanent cure was established by the third or fourth week; at least, only one relapse has been reported. They attribute this favorable result to the more rapid absorption of the preparation given subcutaneously. They regard absolute rest in bed, at least until marked improvement has set in, as a powerful auxiliary, as also a nourishing diet and tonics, especially during convalescence.

They conclude that no one should be deterred from pursuing this line of treatment by the psychical excitement to which the giving of the injection may give rise in some children, or by the slight and easily avoidable local complications, for by this method *brilliant results can be obtained in the largest number of cases, and exceedingly satisfactory results even in the most obstinate cases.*—*Memorabilien*, 2, 1886.

Osteotomy for Inveterate Equino-Varus.—In a paper on this subject read before the New York Surgical Society on December 8, Dr. Charles F. Poore says: From a study of the bones from feet affected with talipes equino-varus, it is evident that the real trouble lies not in *front* of, but *behind* the medio-tarsal joint; and that all operations on the bones are anatomically and mechanically wrong.

The only operation that of late years has commended itself to surgeons is a cuneiform osteotomy or resection of the tarsal bones in front of Chopart's joint; all others have failed to accomplish the end for which they were performed, and have been abandoned.

Tenotomy of the ligaments commends itself as one from which good results may be expected in infants, because it attacks the structure which is the chief obstacle to the normal development of the astragalus, but it has no influence on the curvature of the os calcis, and this it would seem is the cause of imperfect restitution in otherwise promising cases.

In looking at a dissection of a foot affected with the deformity under consideration, the following points suggested themselves:

1. That the inability to correct the deformity was due to changes taking place in astragalus and os calcis.

2. That, in order to bring the anterior portion of the foot into its normal position, the curvature in the os calcis must be removed and the neck of the astragalus shortened, so as to allow its head to point in the normal direction and thus carry with it the scaphoid and other tarsal bones.

To accomplish this, the following operation was performed: An incision was made from a point one inch and a half in front of the tendo Achillis on the outer aspect of the foot forward to the middle of the cuboid bone, and down to the tendons of the peroneus longus and brevis; these should be raised or pushed out of the way. Another incision, beginning from the middle of the first and corresponding to the neck of the astragalus, was made directly upward; the tissues were then raised from the bones and the periosteum incised over that part of the os calcis from which it was desired to remove the wedge. With a chisel a V-shaped piece of bone was taken away, base outward, and its apex extending to its inner border; a wedge was then removed from the neck of the astragalus of such a shape as to allow the anterior portion of the foot to be brought outward and upward. The periosteum was united with catgut and the skin with several wire sutures, because the latter held longer and gave better support.

An aperture was left posteriorly for the insertion of a drainage-tube; a plaster-of-Paris bandage was applied, extending from the toes to above the knee, and the foot was placed in a corrected position; the wound was dressed with iodoform and gauze.

The size of the V-shaped interval left after the removal of the wedge of bone should be sufficient to allow the anterior portion of the foot to be placed in a proper position without any tension on the tissues on its inner aspect. I think that a subcutaneous division of the ligaments on the inner border of the foot, when they are tense, would facilitate the correction.

The dressings should be as light as possible, not bulky; otherwise it will be found difficult to apply the plaster-of-Paris bandage firmly; a little over correction does no harm.

The advantages maintained for this operation over that of removing a wedge from in front of the medio-tarsal joint are:

1. It is anatomically and mechanically correct.

2. A smaller amount of bone has to be removed, because the operation is performed nearer the apex of a triangle.

3. No joint is opened, and, consequently, the foot is left in a more normal condition.

4. It does not practically shorten the foot in front of the ankle joint.

The class of cases suitable for this operation are:

1. Those of patients who have reached the age of

5 or 6 years with the deformity unrelieved, who have walked on their feet, and in whom the parts are rigid and the deformity marked.

2. Those cases in which, although the anterior portion of the foot can be brought into position, yet require an apparatus to retain the foot in its normal position after years of careful treatment.

3. Those cases in which the obstacle to restitution is due to elongation of the os calcis; perhaps in these patients the removal of a small wedge from that bone would accompany the result.—*N. Y. Medical Journal*, Jan. 15, 1887.

THE DELETERIOUS INFLUENCE OF ALCOHOL ON CHILDREN.—By PROF. DEMME, Berne, Switzerland (22d Med. Report of the Jenner Hospital for Children, Berne). We give the following abstract of the above very timely paper, in which this well known writer lays down his conclusions on this important subject, drawn from most careful study, and formed in a large field of observation, and we feel that in this we are doing our readers a real service, for his views in opposing, and justly opposing, the therapeutic abuse of alcohol, touch upon some very important principles in the treatment of children's diseases.

Demme first cautions against the use of alcohol, in whatever form, as an antipyretic, for although the fever-lowering power of large doses of alcohol cannot be controverted, inseparably combined with this action is the injurious influence of alcohol on the energy of the heart, on the cerebral vessels, and on the cerebral activity itself, and we have a salicylic acid, antipyrin, thallin, etc., agents of a more innocent nature, to accomplish this object.

The use of alcohol as appetizers and stimulants to digestion has been rapidly gaining ground among the people, and our nurslings are given their cognac for this purpose. As a sad consequence of such erroneous dietetic measures, and as a direct result of this too early and too abundant use of alcohol, Demme has met with two cases of cirrhosis of the liver, otherwise so rare in children. Both cases terminated fatally; in both cases the abuse of alcohol was proven, having been begun originally for dietetic purposes; and in both syphilis could be excluded. Furthermore, Demme could, in a considerable number of cases, trace a marked cessation or even a retrogression in mental development to the habitual abuse of alcoholic drinks, which in three cases led to epilepsy, while in two cases acute alcoholic intoxication terminated in this neurosis.

In addition to these five epileptics, Demme could trace twenty-one of seventy-one young epileptics, all of which had been under his own observation, to parents one or both of whom were addicted to drunkenness. An unquestionable rôle as an etiological factor the early use of alcohol played in a number of cases of night terrors and of chorea minor. Demme claims that there can be no question that there are infantile organisms in which even moderate quantities of alcohol not only prove injurious in the accepted sense, but can give rise to severe diseases of the nervous system. The introduction of alcoholic drinks into the infantile organism, be it by the people or by the profession in the usual routine manner, must be absolutely discountenanced.

Alcoholics may be administered to children *only as a therapeutic agent, after the condition of their various organs has been most carefully estimated by the physician*, as a powerful auxiliary in the medical tonic regimen in rickets, scrofula, tuberculosis, and all wasting diseases of chronic character. On account of the stimulating action of alcohol on the nerve centres, especially on the musculo-motor centre of the heart, alcoholics are mainly indicated in pædiatrics to spur on the flagging heart in infectious diseases, in asthenic pneumonia, in cholera infantum, in which latter they also serve, according to Binz, as a respiratory food. But the use of alcoholics as food or as a luxury must be positively denied to children.

A NEW METHOD OF EXCISING THE KNEE.—At the meeting of the Medical Society of London, on December 6, MR. H. ALLINGHAM read a paper on a new method of performing excision of the knee joint. The joint was opened by a long vertical incision, and the patella divided into two lateral halves, which, together with the soft parts, were slipped to the sides of the joint; the crucial ligaments having been divided, the joint was firmly flexed, and a slice removed first from the femur, and then from the tibia; the lateral ligaments were not divided. The whole surface of the joint, and the synovial pouches were then cleared of synovial membrane; the patella, if only slightly diseased, was scraped, and the two halves brought together and sutured; if much diseased, it could be shelled out of the entire quadriceps tendon without destroying the connection of the muscle with the ligamentum patellæ, and the split tendinous expansion, together with the split ligamentum patellæ, could be brought together with catgut-sutures. Drainage tubes were inserted through suitable posterior counter openings, and the wound closed with separate sutures. The operation must be performed with antiseptic precautions. Mr. Allingham claimed that by this procedure the joint was more thoroughly opened to inspection at the operation; that dislocation of the tibia backwards after the operation was prevented; that the undivided quadriceps antagonized the hamstrings; that progression was better for the same reason, and that the prospect of obtaining movement was greater.—*British Medical Journal*. Dec. 11, 1886.

BINIODIDE OF MERCURY AS AN EMMENAGOGUE.—DR. C. R. ILLINGWORTH writes to the *Lancet*, of January 29, 1887: I find the red iodide of mercury is a certain and safe emmenagogue. My attention was directed to its virtues quite accidentally some three or four years ago, since which time I have used it successfully in a large number of cases. I prescribe it in the form of mixture as follows, but should think it would act quite as effectually in pills of a quarter of a grain twice a day, or an eighth four times a day: R. Sol. hydrarg. bichlor., ℥j; potassium iodid., ʒss; ferri ammon. cit., ʒi; ether. chlorici, ʒij; aquam ad ℥viii. One teaspoonful three times a day after meals.

THE
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PUBLISHED WEEKLY.

The Editor of this Journal would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, FEBRUARY 26, 1887.

THE ARMY AND NAVY REPORTS.

The Reports of the Surgeon-General of the Army and the Surgeon-General of the Navy for the fiscal year ending June 30, 1886, have just come to hand. The Army Report is a rather miserable looking little pamphlet, without an index, while the Navy Report, though but little larger, is at least substantially and attractively bound, and has an index.

The Army report shows that the last was a year of exceptional freedom from disease, the actual number of admissions to sick report being 3,839 less than for the preceding year, though the troops on the Southwest frontier have had unusual hardships. The ratio of cases of sickness to mean strength of command was considerably lower also than for the previous year. The death-rate, too, fell to a lower rate than at any time within the history of the Army Medical Department. Of interest is the influence of length of service in determining liability to sickness among the troops: the tables show that even in this year of exceptional immunity from sickness in the Army, a greater proportion of sick was furnished by troops under thirty-one years of age; "while up to the age of twenty-five the rate proved so much above the mean for the whole that it may fairly be questioned whether the services rendered by these young men are equal to the cost of their maintenance."

It will be seen that troops in the third year of service, and up to the fifteenth year, afford less than one-half the number of admissions to strength for phthisis to those of any less service; but beyond fifteen years the rate seems to increase. Two years ago malarial fevers occupied the fourth place on the list of diseases, but it is now lowered to fifth place, the number of cases per 1,000 of strength having fallen from 147 to 120 per 1,000, and the rate of mortality .14 per cent. of the cases treated, against .17 per cent. for 1884, and .15 per cent. for the decade. This lowering seems to have been uniform, for no single month has shown any great departure from the normal. Of the 139 military stations from which reports were received 36 showed a higher rate than 120 cases per 1,000, Fort Gibson and Fort Sill, Ind. T., heading the list with 1,287 and 753 cases per 1,000. Considering the dreadfully unsanitary condition of some of the posts it seems a little remarkable that only 76 cases of enteric fever, or 3 per 1,000 of mean strength, occurred during the last year. The number of deaths was about 12 per cent. of the cases treated. During the previous year there were 156 cases, and 222 in 1883. The number of stations at which the disease continued as a result of the infection of the previous year was 19; the number of posts newly invaded was 17; and at 20 posts it ceased to exist. Of the 83 cases of acute articular rheumatism 35 occurred in soldiers under 26 years of age, or 4.14 per 1,000; and there were 41 cases between the ages of 26 and 41, or 2.86 per 1,000. Of the 32 cases of diphtheria 25 occurred at Ft. Assiniboine, Mont., with no deaths. The medical officer in charge, Dr. Henry G. Burton, reported that the task of ventilating the barracks during the winter months was almost impossible.

The report also furnishes some information concerning the health of geographical divisions of the country: "Grouping such stations as are situated on the sea coast and lakes, we find that diseases of the respiratory organs and those of the heart and its valves had a higher rate of occurrence than in either the river regions or the region of mountain and plateau. On the other hand, there was a decidedly lower rate of occurrence for diarrhœal diseases, for typho-malarial fever, and for the malarial fevers." In regard to the health of troops by military departments it is seen that the Department of Texas stands first on the list, with a rate of 1,641 per 1,000 of strength, and a constant rate of 55 per 1,000; being higher than for the previous year. The troops in this Department seem to show a special liability to malarial, diarrhœal and venereal diseases. In regard to a recently alleged antagonism between malaria and science, it may be seen from a table that the Department of the East shows a rate of admission for malaria to 1,000 of strength of 123.9, as against 33 3 for the Department of Dakota. 46.2 for the Department of the Platte, and 24.6 for the Department of California; and that while the South

Atlantic region furnished a ratio of 136 to 1,000 of strength, the North Atlantic was close upon it with a ratio of 114. Or, to speak more definitely, in regard to the number of cases the Department of the East stands second on the list, with 601. 588 of these being furnished by the North Atlantic region.

As regards rejections of applicants for the service it will be of interest to know that of 16,805 applicants 12 per cent. were rejected for general unfitness, and 57 per cent. of all applicants were rejected on the primary examination. About 4 per cent. (831) of rejections were for defective vision, one case of color blindness being discovered, 72 cases of myopia and 5 of astigmatism. The ratio of rejections among negroes was about one-half less than for whites. There were 237 rejections for diseases of the heart and valves, and 621 for varicose veins. There were 429 syphilitics, the negro applicants furnishing relatively the greater number. Of the 376 rejections for intemperance the rate among white applicants was almost four times greater than among negroes.

The report strongly recommends that a board of competent medical officers be detailed to propose a plan of organization for hospital corps suited to the conditions of the Army. This corps should be made up of intelligent and able-bodied men, who should be thoroughly trained and instructed as cooks, nurses, attendants, and litter and stretcher bearers, so that the Medical Department might be prepared for any emergency. Another serious embarrassment to the Department is the number of disabled medical officers, there being now four who have been recommended for retirement by retiring boards, and at least six others who can do no more active service. The Report ends with some special reports by medical officers, among which are one on "Acuity of Vision as shown upon the Target Range," by Asst. Surgeon, Louis A. La Garde; on "Certain Peculiar Pathological Appearances in Texas Fever in Cattle," by Asst. Surgeon Richard C. Newton; on an interesting and rare case of "Repeated Rupture of the Membrana Tympani by Discharges of Artillery," which resulted in total deafness, by Surgeon C. H. Alden; on the "Treatment of Diphtheria by the Use of Mercuric Chloride Internally and by Spray," by Hospital Steward Bernard Persh; and fifteen pages of interesting "Special Reports on Aneurism," by medical officers of the Army.

In his report Surgeon-General Gunnell says: "I have to invite your attention to the condition of the Medical Corps of the Navy. Its vacancies have not been filled for several years; resignations, deaths, and retirements having depleted it more rapidly than candidates have been obtained. The Bureau has not been willing to lower the standard of requirements; and it is imposible, with the present inducements offered, to find young medical men possessing the necessary qualifications who are disposed to become medical officers of the Navy. The Army Medical Department has qualified applicants far in excess of its needs, attracted by better pay, well-defined rank, and more satisfactory professional position. Since 1870 more than thirty young medical officers have resigned (three of them to enter the Army corps), and I cannot too strongly recommend that prompt measures be taken to increase the advantages and improve the condition of this department." It need not occasion surprise that the vacancies in this department are unfilled. For example, the pay of an Assistant Surgeon in the Navy for the first five years after his appointment is $1700 per annum when at sea, $1400 when on shore duty, and $1000 when on leave or waiting orders. The Assistant Surgeon in the Army gets $1600 per annum for the first five years, and after five years $2200. But after five years in the Navy he gets $1900 when at sea, $1600 on shore duty, and $1200 when waiting orders. This difference in pay between sea and shore duty seems unfair. But that which makes the Navy unpopular with young medical men is the undefined rank and unsatisfactory professional position, especially during the first few years of service; and may the Navy continue to be unpopular until this matter is remedied.

Most of the information concerning the Navy as a whole is embraced in a set of tables. There are, however, some very interesting "Reports and Contributions from Medical Officers," which will repay reading. Medical Director T. J. Turner calls attention, in his report upon the Museum of Hygiene, to the sad condition of the Museum as regards room for exhibits, work and library, and also to the necessity for a clerk: "The clerical duties in cataloguing, indexing, labeling, etc., utilizes most of the time of the medical officers attached to the Museum, and there is but little time left for the pursuit of scientific study." One would scarcely think it a part of the duties of a medical officer of the Navy to perform such highly intellectual and exhilarating work as is here spoken of, and especially in such a place, where there should be every opportunity for study. The Director urges that the number of officers on duty at the Museum be increased, preference being given to those officers who have displayed interest in

and are ready to work upon matters so important to the State as public health. "The tools are here but the workmen are not now on hand." Were the Museum of Hygiene in proper condition very much more good work would be done in it than is now done in matters relating to sanitary science and public health; as is shown by the work done by Surgeon Charles H. White in chemical and commercial analyses. It is proposed to investigate the slow chemistry of concentrated and preserved foods in order to determine the time when their nutritive value begins to decidely decrease and when it ceases.

Dr. Turner calls attention to the value of anacharis alsinastrum—choke-pond weed, order hydrocharidaceæ in modifying or arresting the production of malaria. "Its rapid growth and spread in marshes and rivers where it has been planted, and the cessation and disappearance of malarial and diarrhœal diseases formerly affecting villages and towns about such localities, have been grouped into a relationship. It is now suggested to cultivate this aquatic plant in marshy districts with a view to prevent the production of malaria." It might be suggested that the Government make this experiment in the vicinity of Ft. Myer, Va., Fts. Gibson and Sill, Ind. T., and Willett's Point, N. Y.

Medical Director A. A. Hoehling, gives a very interesting account of the Hôpital des Marines, at Cherbourg, of the Haslar Naval Hospital at Portsmouth, and the Victoria Army Hospital at Netley. It is also interesting to learn from him that the Spanish physicians (near Gibraltar) still bleed in "typhus" fever, and for many diseases, as well as practising the old fashioned yearly blood-letting in the spring on the peasantry. "The descendants of Spanish ancestors about Gibraltar also believe in phlebotomy, and even cattle, when purchased at a distance, are bled on their arrival in order that they may renew their blood in the new climate to which they have been brought. The cattle are said to rebel at the operation at times, which proves *their* intelligence."

Surgeon T. C. Heyl, of the "Marion," reports on that affection the parangi disease, or "Spanish pox," by which the ship was invaded at Colombo. The duration of the disease is about fourteen days. "Even when the crop of pustules was so thick as to become confluent, and the abdomen and axilla were bathed in pus, no scar remains." There are no defined prodromata. The eruption appears quickly, as a large papule, soft, becoming a pustule in twenty-four hours, with a red, angry base, the delicate epidermis only being thrust up by the pressure of pus from beneath. The true skin is not invaded. There is no odor from the pustules or contents, and after the pustules shrivel the flesh remains soft. Its period of incubation is from forty to sixty days. All that is needed in treating it is "not to meddle with it by internal medication." "Segregation, employed for three months, would efface parangi from the face of the earth."

Surgeons J. C. Wise and R. C. Persons call attention to several unsanitary conditions of the Service, and other medical officers complain of the sanitary defects of the vessels. In fact, it seems to be almost as much as one's health or life is worth to be on duty on some of our men-of war. It might be suggested, especially, that the "Mohican" be turned over to the Museum of Hygiene as an example of what a ship should not be.

The Report concludes with interesting accounts of Japan, some of the Cities of China, and Corea; and a few notes on drugs, among which may be mentioned reports on the use of the Kola nut, by Drs. Gihon and Hudson, and on the "Use of Opium in Fevers," by General Gunnell.

INTERNATIONAL MEDICAL CONGRESS—TRANSATLANTIC RATES.

In THE JOURNAL for the 5th inst. we published an official notice from the Chairman of the Committee of Arrangements at Washington, saying that reliable arrangements had been made by which members wishing to attend the International Medical Congress in Washington September 5, 1887, can be accommodated by the following steamship lines at the liberally reduced rates mentioned, viz.:

Red Star Line—$100, Antwerp-New York and return.

Inman Line—$100, Liverpool-New York and return.

Hamburg Line—$90, Hamburg-New York and return.

Royal Netherland—$80, Amsterdam-New York and return.

Since that notice we have received authentic information that the several lines named have consented to extend the same rates to the families of members, as the following letter shows:

WASHINGTON, D. C., FEB. 14, 1887.

A. Y. P. GARNETT, M.D., *Chairman of the Committee of Arrangements of the International Medical Congress:*

Dear Doctor:—I am happy to inform you that, through the

instrumentality of Mr. Edward F. Droop, agent in this city for the Lines, who has manifested so much interest in this matter, we have been able to secure from the Hamburg-American, the Red Star and the Inman Lines the offer of the same reductions for the families of members of the Congress as those I have already reported for the members themselves. Very truly yours,

J. W. H. LOVEJOY,
Chairman Com. on Transportation.

To aid the work of the Committee on Transportation, the State Department of our Government at Washington has kindly instructed the resident U. S. Consuls at European ports from which the steamships leave, to actively aid in ascertaining the number of those wishing to avail themselves of the reduced rates offered. This is more fully explained by the two following letters:

FEB. 14, 1887.

Editor of the Journal of the American Medical Association:

Dear Sir:—The following additional information relative to transatlantic transportation is furnished for publication:

The White Star Line, as well as the Cunard Line, having declined to make any reduction in fare, you will please strike out *Havre* from the list of European ports last published.

I enclose also, for publication, a copy of instructions which the State Department has kindly sent the resident U. S. Consuls at the ports of Liverpool, Hamburg, Bremen and Antwerp. Very respectfully,

A. Y. P. GARNETT, M.D.,
Chairman Committee of Arrangements for the International Medical Congress.

DEP'T. OF STATE, WASHINGTON, FEB. 5, 1887.

Sir:—The Committee of Arrangements of the International Medical Congress, which meets in Washington in September next, desire to ascertain as nearly as possible the number of delegates who will attend the same, with a view of making favorable terms for their transportation. For this purpose you are therefore instructed to bring the matters to the attention of those interested by such means as you deem best, requesting that you may be furnished with the names of such delegates as will attend and the number of ladies who will accompany them. The result of your efforts should be promptly reported. I am, sir, your obedient servant,

J. D. PORTER,
Ass't. Secretary.

It will be a great favor to all parties interested in the Congress if the medical periodicals in the different countries of Europe will give the foregoing information to their readers as early as practicable.

AN EXCELLENT EXAMPLE.—The Allegheny County Medical Society, of Pennsylvania, has unanimously voted an appropriation of one hundred dollars towards the expenses of the International Medical Congress. There are many more County and local Medical Societies, embracing a large membership, that could do the same with great propriety, and with out incurring the slightest financial embarrassment.

SOCIETY PROCEEDINGS.

ST. LOUIS MEDICAL SOCIETY.

Stated Meeting, January 15, 1887.

THE PRESIDENT, S. POLLAK, M.D., IN THE CHAIR.

FRANK R. FRY, M.D., SECRETARY.

DR. FRANK R. FRY read a paper on

ELECTRICAL DOSAGE.

The question is frequently asked now a-days by those who are becoming more interested in electrotherapeutics, but who have not especially studied the subject—can we tell the dose of electricity? Can we form a schedule of approximate doses for the various ailments in which we know this agent to have remedial effects? At the last meeting of the American Medical Association in this city Dr. Franklin H. Martin, of Chicago, read a paper on "Electrolysis in Gynecology." In the discussion of this paper Dr. George F. Hulbert, Superintendent of the St. Louis Female Hospital, is reported in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION to have said: "As well use strychnine and quinine without measuring the dose as to use electricity without measuring it with the galvanometer." From this we might infer that the doctor means to say that we can measure the dose of electricity with the galvanometer. In the same discussion, Dr. Geo. J. Engelmann, of St. Louis, in speaking of his methods of operating on fibroid tumors of the uterus by electrolysis, is credited with the following statements: "I know precisely the remedy administered." "The galvanic current must be dosed as we dose other remedies." The inference certainly is that there is a precise means of measuring the dose, and that it is employed by Dr. Engelmann in his work with electricity. Similar statements have been made by other gentlemen elsewhere.

The object of this paper is to attempt to controvert these statements, and, in a general way, the erroneous opinions that obtain about our ability to scientifically or accurately gauge the dose of electricity. It is not my purpose to discuss the results of the therapeutic use of this agent. In regard to the two gentlemen whose names I have taken the liberty to use, it is not necessary for me to say that they are to be congratulated on the results they have obtained, and commended for the amount of careful work they have done in this direction.

In the use of faradic and static machines in medicine, it is at least questionable whether we get directly anything more than mechanical effects. At any rate, we have no data that are available for estimating other effects than these. Hence, in speaking of dosage, we are limited to the galvanic current. In attempting to estimate the dose of this, these items are necessarily taken into account, viz.: the strength of the current, or the quantity passing, its density, and the length of time that it is allowed to pass. I shall consider these items as nearly separately as possible.

Quantity.—The Electrical Congress of 1881 adopted a nomenclature which is being gradually appropriated by the scientific world. Ampère is the word thus selected to express the unit of quantity.[1] It indicates the current carried in one second of time by an electromotive force of one volt through a resistance of one ohm. Most of the recent and best galvanometers are graduated in milliampères. With a good instrument, we are able to know and express, in a universally intelligible manner, the quantity of electricity passing through a patient at any given time. Unfortunately there is not a uniformity in the construction of these instruments. In fact there is no standard galvanometer, and we have no absolute measure of this kind. But we can approach one nearly enough for all therapeutical purposes. This point I may illustrate by comparing the use of galvanometers to that of clinical thermometers. If I tell a fellow practitioner that I have a patient whose temperature is 104° F., my language is perfectly intelligible to him, unless, perchance, he be one of the few unfortunate old fogies who still eschew the clinical thermometer. But he is not sure that my figure is the patient's temperature. If for some reason he wants to know it exactly, and is very confident of the correctness of his own instrument, he will try that. Even then he is not sure, and can only be so by comparing his to a standard thermometer. For ordinary purposes, however, the better class of clinical thermometers are accurate enough. The better kinds of galvanometers do not correspond as nearly in their readings as do thermometers; also they are very much more liable to become defective. But with due care in selecting and occasionally examining the instrument, a good galvanometer is of much practical use in our every day work with the battery; and, as a means of enabling us to express the results of our work to the scientific world, it is now indispensable.

Density.—With the galvanometer we cannot measure the dose. It takes no account of density, quite as important an item as quantity, practically more so. It is a fact, experimentally proved, that a current must be of a certain density before any appreciable physiological effects are produced. Hence we may expect practical therapeutical effects only from currents of considerable density. Practically we estimate the density from the area of the electrodes. To illustrate, if I take two very large electrodes, good conductors, with covers well moistened with salt water, pass a current with them in firm contact with the skin, I see that the galvanometer shows a current strength of thirty milliampères. My patient is not conscious of a current. Now I substitute for one of the large electrodes a much smaller one; when I complete the circuit, the galvanometer shows a strength of but 15 milliampères. The patient feels a tingling in the skin under the small electrode. Although there is a less quantity, the density is greater. By substituting the small for the large electrode, I have increased the external resistance. If I want to get the same quantity as with the large electrode, I must increase the electro-motive force sufficiently to overcome the increased resistance. This I do by switching in more cells, and, of course, in so doing I still further increase the density. We know that with a given quantity, the density in the various parts of the circuit will be inversely proportionate to the transverse section of the conductor. Therefore, if we know the square surface of the electrode and the quantity of electricity in the circuit, we may estimate the density on the electrode. For example, if the galvanometer shows a strength of 8 milliampères, and the electrode is 8×6 cm. ($=48$ sq. cm.), I know that I have a current of 8 milliampères spread on a surface of 48 sq. cm. It has been ingeniously recommended to express this relation in the form of a simple fraction, for the numerator of which we write the number of milliampères, and for the denominator the surface of the electrode in square centimeters. Using the figures just employed to illustrate, 8 milliampères on a surface of 48 cm. would give the fraction ($8.48=$) $\frac{1}{6}$, indicating that one milliampère is spread on 6 sq. cm. of the electrode. Hence, with a galvanometer and electrodes of known area, we can express mathematically the density on the electrode. With this fact in view, the advantage of employing electrodes of known, definite areas is apparent; as is also the convenience of standard or normal sizes, by means of which we may more readily and intelligibly express our methods of applying electricity. But we must remember that we cannot thus determine the density in the body, or portion of the body, through which the current passes. Roughly speaking, if we know the density on the electrode and the area of the transverse section of the portion of the body included in the circuit, we may approach an estimation of the density of the current in the same, mathematically. If the sectional area of such a part be 300 sq. cm., and the surface of the electrode 1 sq. cm., the density of the body will be 1-300 of what it is on the electrode. For obvious reasons this is a very unprecise calculation. The current tends to travel in straight lines, but also to spread on the conductor. This is conveniently represented in the shape of a diagram (illustrated). The density is much greater, as the lines show, near the electrodes, decreasing as we depart from them. It is also greater in a direct line between the electrodes. These differences of density we cannot estimate accurately. Before we can we must know more than we do about the resistance of the body in health and disease. This point is being now studied by prominent electricians, with more promise of satisfactory results than ever before. The showings of recent investigations would seem to indicate that there will be necessity for radical changes in the current theories of electrotonus, polarization and other phenomena connected with the application of electricity to animal organisms. I mention these facts as merely suggestive of the magnitude, as well as the unsettled condition of the problem of the resistance of the human body. Yet its importance as an item in the matter of dosage is evident.

[1] The coulomb is the unit of quantity, ampère is the unit of current, and equals a current of one coulomb per second, and is as defined above. See discussion of paper.

Length of Séance.—Regarding the length of time that the current is allowed to pass, little need be said for our present purpose. We all agree that weak currents may be continued longer than strong ones, that a séance may be longer with some individuals than with others, and that it must vary with the varying conditions of the same patient; that the length is often limited by very apparent physical defects, etc. These points are determined, and, in the nature of things, always will have to be determined, in every case, by the individual experience and knowledge of the operator. A remedy, no matter how simple, is only used to the best advantage by one having a large individual experience with it. This is more true of electricity than many other remedies. With an increasing experience, we discriminate more successfully between suitable and unsuitable cases for its use. Experience also will determine our methods of employing it. The use of very few remedies can be reduced to a scientific method, so that we may express in terms of mathematical accuracy the conditions requiring their exhibition or the size of doses. In this respect electricity conforms to the majority of remedies. Data do not exist from which we may construct scientific formulæ to guide us in making the dose for use in any of the various ways that we know empirically to be beneficial. Especially is this true when we are seeking to get its physiological as distinct from its mere physical effects. These facts should not discourage us, nor cause us to underestimate the honest, successful work that has been done. The necessary admission of them should be a stimulus to greater endeavor in attaining to methods less liable to error. In this spirit, all who are sufficiently informed on the subject, will remark with much satisfaction the increased manufacture of galvanometers available for clinical purposes, and the correspondingly increasing tendency to employ these instruments, as well as electrodes of graduated sizes. An accuracy in the application of electricity is attainable with them that without them is impossible. There is, however, much room for improvement. It will probably be some time before these more accurate means are as universally employed as they should be. As evidence of this, I offer the following: Recently I have written to a number of prominent neurologists who make a more or less extensive use of electricity in their practice. I asked each of them (1) how constantly he used a galvanometer, and (2) for what purpose or purposes he used it. They all very kindly replied. I quote some of them as follows:

Dr. ——, Cincinnati: "I always use a galvanometer with my large office battery. It is one I procured a number of years ago in London; but, for some reason I do not understand, it has lost its delicacy, and is no reliable guide in diagnosis and therapy. The most valuable galvanometers have been constructed in the last two years, but I have neglected to secure them." Dr. ——, Brooklyn, N. Y.: "I seldom use a galvanometer, and only when I wish to pass the current through the brain of a sensitive person, or some equally delicate work. I don't depend on it even in the most delicate operations." Dr. ——, Chicago: "I do not use a galvanometer constantly. I never saw one that was entirely satisfactory. I should not use one constantly if I had a perfect one, however, because they in no way assist me in making my applications further than they demonstrate to me the condition of the battery. In small operations, I find that currents of like strength, on different days and under different conditions of the atmosphere, different conditions of the parts to which the electrodes are applied, differ so much in their effects, that I have never been able to get any great good from knowing just how much electricity accomplished the given results." Dr. ——, St. Paul, Minn.: "I have a galvanometer (simply a magnetic needle surrounded by a coil of fine insulated wire), but I never use it. I depend on myself. The electrodes applied to the tongue and sides of the face is an exceedingly sensitive galvanometer, and one that never gets out of order. The time when a galvanometer would be of most value is when the current is applied to the head. But, as I said, even in those cases I am my own galvanometer."

The first of these gentlemen has been, by his own admission, negligent in this matter. The others are mistaken. The source of their mistake is, I believe, in their failure to appreciate for what purposes the galvanometer is to be clinically used, and the advantages to be thus gained. I venture the prediction that a year or two hence, if asked the same questions, their replies would be more uniform, and in substance as follows: "In private office practice I always use a galvanometer when I use the constant current, for the purpose of knowing at each and every application how much current is passing through the patient's body; in other words, what current strength I am using." This is the reply to the readers' questions received from the chairman of the committee on electrical dosage that reported at the last meeting of the American Neurological Association (*St. Louis Courier of Medicine*, October, 1886, page 325).

Stated Meeting, February 12, 1887.

THE PRESIDENT IN THE CHAIR.

DR. T. F. PREWITT presented a

PATHOLOGICAL SPECIMEN FROM A KNEE-JOINT.

It was first located below the patella, later at the left side of the joint. At first it caused little annoyance, afterwards a great deal. It was removed under antiseptic precautions. Before removal the body seemed to be but half its actual size, because only half of it could be felt through the tissues.

DR. PREWITT also presented a

COMPOUND COMMINUTED FRACTURE OF BOTH BONES OF THE LEG.

It was taken from a man who had fallen sixty feet with a falling scaffolding. The accident occurred in a brewery in East St. Louis, where ammonia is used. The pipes broke and the gas was inhaled by the patient, so that the lungs were much irritated. This

was the cause of some fever, and it was difficult to say how much was due to this and how much to the injury of the leg. The physician who first saw the case removed a great many pieces of bone; found some hæmorrhage, which he succeeded in stopping; tried to find the bleeding vessel, but failing, put the limb in plaster. About four days afterwards bleeding began. He opened the wound and attempted to stop it with styptics; got it controlled, but the hæmorrhage recurred, the patient losing much blood. He was brought to St. Louis and put in St. John's Hospital, about ten days afterwards. The wound was full of pus burrowing upwards and downwards in the the leg. I cleaned the wound to determine where bleeding came from. I was called the following morning, to find that the patient had lost a considerable amount of blood. I was satisfied that the only alternative was amputation. I had supposed that it was the posterior tibial artery bleeding, but it was the anterior. In it is an opening 5 lines in length and 3 lines in width. This is where the bleeding came from. The hole in the artery is not the result of sloughing, it is a part of the original injury. There has been a good deal of fever before and since the operation; as high as 102.8° F. The wound was in a septic condition. It was not prudent to make flaps. I made a circular amputation and left it freely open. In the last three days his temp. has been 99.8°, and I think he is in a better condition.

Dr. Meisenbach asked what form of styptic was used by the physician?

Dr. Prewitt said he thought it was Monsell's solution, or the chloride of iron.

Dr. Pollak asked as to the condition of the lungs.

Dr. Prewitt: He had a cough and soreness about the lungs, but I have found no pneumonia. He can hardly speak above a whisper.

Dr. Dean, referring to the unfinished discussion on Dr. Fry's paper at the last meeting, would like to answer Dr. Engelmann's remarks of that evening in full, but the gentleman is not present. I understand the paper to say, "With the galvanometer we cannot measure the dose. It takes no account of the density." Then follow the experiments, first that with the two large, equal-sized electrodes, causing little feeling on the part of the subject, and secondly with one of the electrodes small, the result being a tingling of the skin under it, a less number of milliampères by the galvanometer, a less quantity of electricity and greater density.

The density in any part of a given circuit and current is inversely proportional to the sectional area of that part, and nowhere in the circuit can it be greater than in the smallest part of that circuit. The number of milliampères also of current passing through a circuit can be no greater than passes through that part of the circuit furnishing the greatest resistance. That the resistance is not mainly in the smaller sponge electrodes may be shown by applying first the large sponges, secondly the large and small sponges, directly to each other, without the intervening part of the subject, when no such disparity will be shown by the galvanometer, making due allowance for imperfect coaptation of the irregular sponge electrodes. The resistance of the circuit is mainly in the epidermis of the skin. It is the chief resistance of the body, the aggregate resistance of which is said to be more than twice that of the Atlantic cable. Increase the area of the skin under the electrode, and you decrease the resistance of the circuit; especially so, as the ducts of the sebaceous glands and of the sweat glands are better conductors than the horny epidermis. The resistance will vary if the small electrodes be applied to different parts of the surface previously covered by the large electrodes. The number of milliampères shown on the dial of the properly calibrated galvanometer will accurately indicate the current strength. Time must be considered to know the number of units of quantity administered. The resistance can be measured by the rheostat. The density of the current at the entrance of, and exit from, the skin, may be estimated from the areas of those parts of the skin covered by the electrodes. Cut the patient out of the circuit, after having noted the number of milliampères, switch in a resistance equal to that of the patient, and then apply the electrodes directly to each other, and the galvanometric deflection will be the same as with the patient in circuit, showing again that the main resistance was in the skin or person, and not in the electrodes. Of course, the chemical, physiological, physical, or therapeutical effects of electricity require taking many things into consideration. If the paper intends this, as I think its general tenor nearly proves, then I would agree with it if it stated instead: "With the galvanometer only, we cannot measure the therapeutical dose of electricity." The like is true of other dosage. With the apothecary scales only, we cannot measure the therapeutical dose. The scales do measure the actual dose of any given ingredient, and that is all that is expected of them. One or three minims of sulphuric acid, weighed or measured, are a definite quantity. If given pure, the effects will be quite different from what they would be if given diluted to 10 or 30 minims, as in the pharmacopœial diluted sulphuric acid; and then the effects will be different if this dose is largely diluted with water, and taken at the back of the mouth through a glass tube; and even then many things are to be taken into account, and cannot be fully followed, as diffusion, changes in the body, etc. We cannot send it to this or that organ or part with any definiteness. (Even in preparing the pharmacopœial dilution, it is essential to add the acid slowly to the water, and not to pour the mass of water upon the acid.)

I agree with the paper, that the mere possession and use of a galvanometer are not all of electrotherapeutics, however essential the use. Every discoverable factor must be known and used—no more so, however, than in other departments. The mere possession of a microscope, and looking down through its tube, unravel or reveal very little of the microscopic world.

Dr. Fry said he understood the point made by Dr. Dean. But in dosage the skin must be taken into account, the physical as well as the physiological effects have to do with therapeutic results. With

strong currents he had often seen neuralgias, sciatica, for instance, benefited. The current was often strong enough to blister some. He considered the good results in these cases very largely due to the physical effects. Probably the nerve was traversed by the current, producing physiological effects that helped also. He thought that Dr. Dean and he agreed. The density on the skin is estimated by the size of the electrode. This, of course, can only be done when we know the quantity, which is shown to us by the galvanometer, it being an essential means of estimating density as well as the size of the electrode.

Last Saturday evening Dr. Dean had called attention to a technical inaccuracy in the paper, in that the ampère is said to be the unit of quantity. The coulomb is the unit of quantity. An ampère is a current of one coulomb per second. The ampère, therefore, includes the coulomb. Both of these units were embraced in the old term Weber, which is now going out of use. The error had been made inadvertently in trying to use language as free from technicalities as possible.

In reply to Dr. Dean's question as to where the increased resistance was when a small was substituted for a large electrode, he said to a slight extent in the smaller electrode, but principally in the skin. We use large electrodes to overcome the resistance of the skin. Professor Stone, an English experimenter, believed this resistance could be reduced to *nil* by using very large lead electrodes, moistened with salt water.

To a question by Dr. Hurlbert, if he used the term density in the same sense as potential? Dr. Fry replied in the negative, and showed by a diagram that potential referred to the electric-level.

Dr. Hulbert thought Dr. Fry had demonstrated that it is a necessity that we use the galvanometer in the accurate application of electricity. He understood the term potential to mean the power the current has of accomplishing a certain work; the power of overcoming resistance. This term conveniently conveys to our minds a clearer idea of the effects of electricity physiologically.

Dr. Dean: Potential represents the degree to which a body is electrified. A difference of potential is a difference in electrical-level. Back of that is the electro-motive force at work within the cell that creates and keeps up the difference of potential. Work does not include the element of time. Power includes the work and time or rate. The term "tension" is dropped for potential. The term strength (of current) is supplanting the term "intensity" (of current), which is a bad imitation or translation of the French *intensité*, which, in electricity as in music, means strength.

Dr. Lee mentioned the fact that bichromate of soda was much better than bichromate of potash for use in making battery-fluid.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, January 26, 1887.

The President, J. Solis-Cohen, M.D., in the Chair.

Dr. Thomas S. G. Morton read a paper on

ABDOMINAL SECTION FOR TRAUMATISM, WITH REPORTS OF FIVE CASES.

(See page 225).

Dr. Charles B. Nancrede said: I understood Dr. Morton to say, that the case of suture of the intestines for ball wound which he reported was the first so treated in Philadelphia. He is mistaken, for I operated on a case of gunshot wound of the abdomen some seven months ago, and reported it to the Academy of Surgery three months ago. I should like to compliment the Doctor on the immense amount of labor evidenced by his paper. I think this is a timely subject for discussion. Some three months ago I had the privilege of taking part, by special invitation, in a discussion on gunshot wounds of the small intestine, which took place in New York; and was participated in by most of those who had operated up to that time. The conclusion arrived at was that all penetrating ball wounds of the abdominal cavity demand at least an exploratory operation, and if any wound of a viscus be found its repair should be attempted. I should like to enter a protest against the evident tendency to advise the opening the abdominal cavity by any practitioner in every ball wound. Where a large tumor has been removed the abdominal walls are lax, and there is plenty of room for manipulation. In laparotomy for gunshot wounds or other injuries, the difficulties are ten-fold. You have to operate through a tight and narrow opening. In prolonged operations there is often difficulty from distention of the intestines. The difficulties in finding the wound are sometimes exceedingly great, so much so that if I had a ball wound in the abdominal cavity, unless I could be operated on by one who was in the habit of doing abdominal operations, I should rather trust to the old let-alone plan. I have seen undoubted penetrating ball wounds of the abdomen recover.

Let me say a few words about my own case which, I think, shows the important point, although I could not secure a post-mortem, that peritonitis is not the only thing we should dread. I saw the boy six hours after he had been shot. The wound was a little to the left and above the umbilicus. He vomited blood one hour and a half after admission, although the operation showed that both the anterior and posterior walls of the stomach had been perforated. I determined that the wound was a penetrating one and made an incision in the median line; and I would warn any against enlarging the existing wound, if not in the median line. I found a wound of the anterior wall of the stomach which I closed with fine silk, using a fine sewing needle. Then I found a wound in the anterior wall of the duodenum which I sutured. I next looked for and found a wound of the posterior wall of the stomach. A

large ragged wound in the posterior wall of the duodenum was also discovered. Examination from the stomach down almost to the ileo-cæcal valve revealed no other wound. A careful toilet of the peritoneum was made and the wound closed. The boy did well for forty-eight hours and never presented the least symptom of peritonitis. When peritonitis comes on suddenly there may be a profound condition of shock which will not admit of rise of temperature, rigidity of the abdominal muscles, flexion of the limbs, upon the pelvis, pain, or any of the usual symptoms, but this is not the case in slowly developing peritonitis. The boy died on the third day with a series of convulsions with very high temperature. I believe that he died of sapræmia, due to the absorption of ptomaines. The cold water coil, which was used almost from the outset in both of the successful cases of Bull, of New York, was not used, and I think more opium was given than was wise. We have long been taught to give opium in full doses in traumatic peritonitis, but I believe that many cases are killed by this treatment. When the initial symptoms are marked by collapse, low temperature, rapid, feeble pulse, and clammy skin, if you give large doses of opium simply to ward of the expected inflammation, you will probably kill the patient. If you give moderate doses of morphia with large doses of atropia, you will possibly rally the patient and carry him over the shock stage. I think that large doses of opium should not be given in peritonitis unless guarded by atropia. It should be given by hypodermic injection, for you do not know how much will be absorbed from the stomach. At the end of a peritonitis where, from the respiratory centres becoming involved and from interference with the action of the diaphragm by tympany, hypostatic congestion of the lungs is taking place, persistence in the use of large doses of opium will kill the patient. If the opium is reduced to a minimum and given with large doses of atropia, or atropia alone is exhibited you will sometimes tide the patient over.

I think we should offer a word of warning against the tendency to operate on every case of abdominal wound without proper precautions. It should be done by a skilled hand. Not every case is fitted for it. The condition of the patient should be carefully considered before such an operation is attempted, and I hope the Society will be careful how it endorses an operation of this kind as the *rule* for penetrating wounds without further light upon the subject.

Dr. S. S. Cohen said: Dr. Morton has spoken of the injection of hot water into the abdominal cavity for the purpose of restoring the pulse in cases of severe shock and collapse. It may be interesting to mention that Dr. Benjamin Ward Richardson records successes following injection of hot milk into the abdominal cavity for the purpose of restoring patients in the collapse of cholera. The same measure has been used successfully by others. Dr. Morton also stated that he knew of no case in which poisoning with boric acid had occurred. Such a case has been reported in the *Medical News*, some two years ago, by Dr. Brose, of Indiana.

Dr. G. G. Davis said: We have been taught that penetrating wounds of the peritoneum are not to be probed. The author has mentioned this as one of the means of diagnosis. If other diagnostic points are present, probing is not necessary; still, I think it is justifiable to use the probe if it is done antiseptically. The time of probing was not touched upon. This, I think, is a very important point. When called to see a man who has been shot in the abdomen or any other part of the body, the question arises whether or not it is justifiable to probe the wound at once. I believe that it is not; unless certain precautions are taken and unless the surgeon is prepared to follow up his examination, if necessary, by operation. If there is hæmorrhage it requires attention. Outside of that I can conceive of no circumstance which will require immediate manipulation of the wound. The examination should be deferred until the patient is brought to the hospital or to his home, and the examination made once for all, at the time when the surgeon is prepared to go on with the operation, if one is necessary. The indiscriminate examination of Garfield's wound was severely criticised by Esmarch, and he had good grounds for his criticism. I have not seen many cases of gunshot wound, but I can recall three cases in which the abdomen was involved. In none of these was any operation performed, and they all speedily died. If the operation is to be done, it should be done early. The cases which I have seen remained in a comparatively good condition for a few hours, but toward the end of the first or second day many of them will die, particularly if the wound is a large one. They seem simply to sink away.

As regards the use of hot water injected into the abdomen, a less radical method is the injection of the hot water into the rectum, which is frequently used, and which I employed at least six years ago. A temperature of 108° to 110° will be found comfortable.

Dr. Morton: In regard to Dr. Nancrede's remarks, they are practically covered by what I have already said. The question of what cases should be operated upon, and by whom, is still under judgment. It would seem to be the judgment of the majority that all cases of penetrating wounds should be opened. The probe would only be used where you were prepared to operate if necessary. In many cases the ordinary signs of peritonitis are perfectly worthless. The case of ruptured intestine which died presented no apparent symptom of peritonitis.

In those cases where intraperitoneal injections have been made in cholera, it has been on account of the empty condition of the blood-vessels. Here it is commended for the treatment of shock, pure and simple. It is simply the application of heat. The use of hot enemata has long been practised in the Pennsylvania Hospital, but it is not so satisfactory as large hot water irrigations at a temperature of 100° to 110°.

With regard to the question of mortality, the table shows the total mortality of cases reported. It is probable that the real mortality is even larger. Every successful case has doubtless been put on record, while it is likely that many unsuccessful

cases have not been published. The table also includes the first cases operated upon, and I think that the next three years will show a great change in the mortality. It will probably get to and remain at about 50 per cent. Many of these operations were performed without the knowledge of abdominal surgery which we now have, and many of those who operated may have had no experience with abdominal work.

Most of these cases of traumatism involve the question of murder. If we save 30 per cent., perhaps fifteen of these will be murder cases, and on the life of each of these patients would depend that of another person, so that we should really save forty-five lives.

STATE MEDICINE.

MEDICAL LEGISLATION IN ARKANSAS.

Resolutions of the Izard County Medical Society.

We have carefully examined the existing Law to Regulate the Practice of Medicine and Surgery in the State of Arkansas; and, inasmuch as it ostensibly purports to protect the medical profession and the general public from incompetent physicians, and unscrupulous charlatans and quacks, we desire to say, with due respect to the makers of the law, that it is a total failure in our opinion for the following reasons:

First. The law directs that all persons who have been in the practice of medicine for a period of five years previous to the passage of the law, be allowed to continue in the practice, provided their names be registered in the clerk's office in their respective counties. By this means all incompetent practitioners of *five years'* standing were allowed to continue under the protection of the laws of the State.

Second. The law provides that the County Judge of each county appoint a board of three physicians in his county, which shall constitute an Examining Board for all who might apply for license to practice medicine; and, which shall, at its option, grant license to any applicant. The County Judge was, in some instances, incompetent to appoint a board intelligibly; and in some instances these officials selected their boards through favoritism rather than from merit. In this way incompetent boards have been appointed. These incompetent boards more frequently make the paltry fee, than merit, the requisite qualifications for license.

Third. The law requires that all persons who have been in the practice of medicine for a less time than five years go before the board of his own (or some other) county, and submit to an examination, and pay said board a fee of six dollars before being allowed to register his name as competent to practice medicine. Here the law is *unfair* and *unjust;* it compels the *intelligent* and *conscientious* physician to submit to the indignity in some instances of being examined by an incompetent and ignorant Examining Board; it compels young men who have spent their time and money to qualify themselves for intelligent physicians to submit to the same ordeals that the most ignorant must undergo.

Fourth. There are instances in which persons who could not get license to practice medicine in their *own* counties have gone to *other* counties and obtained license, and returned to their *own* counties to practice medicine. By this means we know of no failures to get license, even by the most ignorant applicant.

Fifth. The law instead of elevating the standard of intelligence and honesty in the medical profession, has a direct tendency as far as legislation can effect it, to lower its standard by legalizing quackery and ignorance, and by lowering honesty and intelligence to the same grade with dishonesty and ignorance, thereby tending to discourage young men from properly qualifying themselves, and inviting ignorant practitioners and unscrupulous quacks into our State from surrounding States, which have passed sensible laws to prevent that class from practicing within their borders.

Sixth. The general public, confiding in the intelligence and honesty of our Legislators, and knowing no criterion but experience, have in a great measure learned an expensive lesson, for it is the public which has received the principal evil results of this most unwise law.

Now, WHEREAS, we believe the above statements are facts—that the present law encourages and protects ignorance and quackery; that it invites the incompetent class of medical practitioners from other States; that it discourages our own young men; that it elevates ignorance and degrades intelligence to a common level, as far as lies within the reach of legislation to accomplish it; that it is deceptive to a confiding public; that it is, useless, unjust, and an insult to a conscientious and intelligent medical profession, and to an intelligent and confiding public; therefore, *Be it Resolved*,

First. That the medical profession is ancient, time-honored, coeval with civilization, and has ever been an essential factor in every advance made in the development of science and in the promotion of human happiness; and that those who are worthy members of the medical profession are engaged in a grand and a noble cause.

Second. That as the medical profession has for its object the health, well being and happiness of the human race; it needs no legal protection to perpetuate its existence or to promote its progress, but it is the public which is imposed upon by quackery, that needs legal protection.

Third. That we esteem the existing law a farce, a a fraud, and as unworthy a place on the Statutes of the great State of Arkansas, and we recommend that our next Legislature repeal it; and if it must have a law, that it enact one that will protect the *public* from the numerous ignorant pretenders who are now resting under the protection of the present law.

Fourth. That we will not serve on the County Board, nor will we accept a certificate from any County Board as sufficient evidence or authority as to any physician's qualification.

Fifth. That we respectfully submit these resolutions to the medical profession of the State of Arkansas, and ask it to give them its careful consid-

eration; and if they meet with the approval of the profession we ask the various Medical Societies in the State to join us in presenting these resolutions to the next Legislature.

FOREIGN CORRESPONDENCE

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

The Health of London—New Remedy for Whooping-Cough—Death of Mr. Thomas Ward Jeston.

Two interesting communications regarding the health of the city and the health of London at large respectively have recently been made public. The report regarding London and its health is contributed by Dr. Lewis Parkes, who writes on the death-rate of the metropolis at large. Here there is to be found cheering news for Londoners, in the assertion that during the last forty years the death-rate has steadily diminished. Dr. Parkes's figures prove this clearly. The average death-rate per 1,000 living persons for the following periods of five years shows in each case a gratifying diminution of mortality. From 1846–1850, the death-rate as above defined was 25.4; from 1851–55 it was 24.7; from 1856–60, 22.5; from 1861–5, 24.5; from 1866–70, 24.3; from 1871–75, 22.9; from 1876–80, 22.2, and from 1881–85, 20.6. Dr. Parkes points out a significant fact in connection with the vital statistics of London, when he notes that since 1876 the birth-rate has also steadily diminished. In 1876 the birth-rate was 36.5 per 1,000, in 1885 it was 32.6. This is the lowest birth rate recorded since 1850, when it was 32.05. The result of this fall in the birth-rate, curiously enough, as Dr. Parkes points out, will be to increase the death rate. In other words, if the death-rate remains steady, as regards lowering influences and actual disease, the limitation of populace through a small birth-rate will raise the mortality returns, this result being due simply to the altered distribution of age which the population would necessarily exhibit. Facts like these afford food for thought when the constant cry of overcrowding rings in our ears. It is a possibility of the future that the adjustment of population in great centres may be wrought out on some such basis as Dr. Parkes indicates. We shall be in the position of a population which, while not excessively increasing in numbers, exhibits a tendency to longer life on the parts of its units. Grave questions of political and social economy may wait on the striking of such a balance between increase and decrease, but as the matter stands, it would appear that the character London has acquired for health is founded on a perfectly correct appreciation of its sanitary merits. Probably the area of London is so wide and so varied in its character that it presents localities for habitation suitable to many types of life and constitution. Be this as it may, the facts justify the hope that our death rate may be still further and speedily reduced.

The communication concerning the City of London is from the pen of Dr. I. Ebbetts, and deals with the sanitary state of the City proper. He reminds his readers that in more than one sense the City is admirably engineered, namely in respect of its roadways, its scavenging and its sewers. The sewers extend about forty miles in length. They have to convey the sewage of several outlying districts as well as the sewage of the City proper. This duty these great conduits discharge in a satisfactory fashion, being kept in due order by a staff of an inspector, a foreman, and some eighteen men. As regards the public carriage of waste, the City of London has little to complain of. Mr. Ebbett's protest is reserved for the private drainage arrangements of the City. The perfection of house drains is admitted the backbone of all sound sanitation, as it is the chief element in the preservation of domestic health. Elsewhere there are by-laws—the model by-laws of the Local Government Board—which regulates the fittings of house drains, and which provide especially for an air trap between the house drains and the sewer, as well as for the erection of a ventilating pipe from the highest level of the house drain itself. Again such by-laws forbid the use of the pan-closet, as well as that equally noxious appliance the D trap. So far such by-laws effect a good purpose in pointing the way to better things, and in most districts their laws are adopted. However, in London City there are practically no regulations regarding the method in which house drains shall be constructed. The commissioners of sewers are possibly appalled by the magnitude of the changes which their operation would make. Mr. Ebbetts does not advance his charges without knowing his facts. People are accustomed to speak disparingly of Parisian sanitation, to lament the odors of the sewers, but even in Paris they enforce regulations concerning drains and soil pipes, and insist on the ventilation of the drains. In the City of London neither of these provisions appears to be regarded as necessary for the health of the inhabitants. When a house is about to be constructed in the City, the builder submits a plan of the basement, showing the positions of the various rain and soil pipes, and other sanitary appliances. The commissioner's engineer settles the size of the drain which is to be laid, and the commissioners, at the owner's expense, construct the drain from the sewer to the front wall of the house. There need be no air shaft or efficient trapping. He may join or construct his pipes precisely as he thinks fit, and in a sanitary sense the builder is, within the walls of a city tenement, monarch of all he surveys. There is an iron flap, it is true, fixed, at the owner's expense, at the junction of the city house-drain and the sewer. This flap opening outwards only, is believed to prevent the access of rats and the ingress of sewer air, but as Mr. Ebbetts shows, sewer gas is far too insidious a visitor to our houses to be kept out by an iron flap. Mr. Ebbetts asserts that there is a gross neglect of the common precautions of the time against disease in the city, and shows that abutting on the city district, without drain regulations at all, there are districts regulated by at least fairly efficient by-laws.

New remedies for whooping-cough continue to

crop up. Quite recently Dr. Suckling thinks he has found a specific for pertussis in carbolic acid—or nearly so. He says he has used the glycerine of carbolic acid with great success among his out-patients at the Children's Hospital. Half a minim of the glycerine of carbolic acid given in peppermint water is sufficient for a child a year old.

Mr. Thomas Ward Jeston, J. P., the popular and well-known founder of the Reading Pathological Society, has just died at an advanced age. In early life he was an army surgeon, in the 36th regiment of foot, throughout the Peninsular war, until quite recently he took great interest in the working of the British Medical Association. G. O. M.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Social and Physiological Inequality—New York Water Supply—Abuse of Medical Charities—Manhattan Eye and Ear Hospital—Medical Society of the State of New York.

At the February meeting of the Section on Public Health, Hygiene and State Medicine of the Academy, Dr. Henry D. Chapin read a valuable paper on "Social and Physiological Inequality," in the course of which he said: The question of the hour is the social problem, and the new science of sociology overshadows all others. The air is full of the angry clamor raised by different classes, all arguing from the standpoint of their own interests. It is evident that in the present state of society many are hopelessly worsted in the effort to gain, not a competency, but a moderate sustenance. The mutterings of discontent heard on all sides have their basis largely in the belief that the fault lies in a friction resulting from an artificial social order.

It is a favorite corollary of our political system that all men are born equal. In fact, there is no such thing as equality. Two stupendous factors are present in all life, physical as well as mental, viz.: heredity and environment. These all controlling influences are present for good or evil in varying proportions in different lives. With the generation of life, heredity, whose mysterious effects we must recognize without understanding them, has done its best or worst for the beginning of existence; its potency has been in the past acting, perhaps, through long reaches of time. With commencing life comes in the new element of environment, as the complement of heredity to enhance the evil trait, or perhaps obliterate it—too often to sow the seeds of physical and mental weakness in a constitution that received a healthy start.

To insure correct environment and habit, particularly in the early years of life, is of vital importance to the well-being and efficiency of the individual. This, unfortunately, is not, and in many cases cannot be, done. Hence the fearfully unequal physical, mental and moral equipment of mankind, that allows the minority to have too much, the majority too little of the world's necessities and comforts. Such problems as how to conserve and prolong life, how to lower the death-rate in children, how to produce good hereditary development, how to strengthen the bodies and minds and enlarge the spiritual bounds of men—all these and many others are included in a conception of this subject.

No altered laws will compensate for defective knowledge or will power in the regulation of human affairs. Two leading theories have been advanced to reorganize society, socialism and communism. As human society is constituted, these are idle fancies. Legislators cannot prevent the unerring economic law due to fundamental differences in men's moral and intellectual development. Modern civilization is adapted to make the sharp sharper and the dull duller, or, in other words, conduces to condensation of wealth and diffusion of poverty. All artificial adjustments only complicate existing troubles in leaving untouched the real causes of the troubles. The lazy and criminal classes are the inevitable product of our complex civilization. They are developed by laws which it is the duty of good people to find out and obviate. It is the business of government to prevent or mitigate any environment that all experience shows will produce physical, mental and moral deterioration.

Dr. Chapin spoke particularly of the tenement-house system and its evils, and after the paper had been discussed by Drs. Spitzka, Janes, and Stephen Smith, Bishop Huntington, Mr. Charles F. Wingate, the sanitary engineer, and others, a resolution was adopted requesting the Academy of Medicine to use its influence to secure the passage of the act now before the State Legislature enforcing the registration of tenement-house owners at the Health Department, and other regulations for the welfare of the tenement-house population.

In his report to the Mayor of the work of the Department of Public Works for 1886 the Commissioner, Gen. Newton, states that during the year 5,270,000,000 gallons of water were drawn from the storage reservoirs and lakes in the Croton Basin for the water supply through the Croton aqueduct, and 2,670,000,000 gallons from the Bronx River reservoirs for the supply through the Bronx River conduit. There are now 604 miles of water mains and 14,582 water meters in use in the city. The amount of revenue from the water service in 1886 was $2,354,121; being an increase of $223,445 over the amount collected in 1885.

At a meeting of the Aqueduct Commission held February 7, it was at last definitely decided to build the great Quaker Bridge Dam, which has been so long in contemplation. It is to be 277 feet high from the bottom of the foundation and 1,500 feet long, and the estimated cost of the dam and its appurtenances is $4,027,600. The whole project, including the purchase of 4,000 acres of land, will involve an estimated expenditure of $6,743,100. The report in favor of the construction of the dam, which was signed by six of the seven Aqueduct Commissioners, was presented by Mr. Barnes, chairman of the committee on construction, and in it reference was made to the fact that some of the best hydraulic engineers

of modern times have indorsed the Quaker Bridge Dam project, and that the opposition to its construction came from only a few of the many taxpayers of the city, and from some engineers who were not usually considered of the highest rank. Gen. Newton reinforced the majority report by a supplemental statement favoring the project as the best one for obtaining a requisite supply of water for the increasing population of the city. In a minority report which was signed alone by Mr. Spencer, President of the Commission, it was claimed that the dam, besides entailing an expense of over $10,000,000, would enclose an enormous amount of water which could not be distributed through the aqueduct in a thoroughly pure condition. In answer to this sanitary point against the construction of the dam, a letter was read from Prof. Charles F. Chandler, for many years President of the Metropolitan Board of Health, commending the project, and denying that the water drained from the lake formed by the dam would be impure.

Including the capacity of the Muscoot reservoir, 2,500,000,000 gallons, and the Croton reservoir, 1,500,000,000 gallons, the new dam will make a reservoir of 38,377,935,000 gallons. When completed it will constitute the most stupendous piece of engineering of the kind ever attempted in the history of the world, and the great American Eagle will once more have an opportunity of flapping his wings over the diminished heads of the effete monarchies of Europe and all the rest of creation.

In the recently published seventeenth annual report of the Manhattan Eye and Ear Hospital, which now occupies the beautiful new building erected for it on Park Avenue, near the Grand Central Depot, are to be found some facts of special interest. From it we learn that constant and vigilant efforts are to be made to exclude from the benefits of the hospital all who are not, by reason of poverty, deserving of gratuitous care. A registrar occupies a desk near the door, and asks the following, among other searching questions, of every applicant for treatment:

"How much money have you in savings or other bank?"

"How many persons are dependent on you for support?"

"How much rent do you pay?"

"Can you afford to pay anything for medical advice?"

During the year just past 259 applicants were rejected after such inquiries, having acknowledged that they were able to pay. Moreover, after such inquiries have been made and satisfactorily answered, the beneficiaries or their friends are asked to contribute what they can to the treasury of the hospital; and it is of interest to learn that during the past year there was contributed by the acknowledged poor beneficiaries the sum of $6,614. All the money thus received was expended for the benefit of the hospital and dispensary patients.

The report contains a diâgram which gives in graphic form a digest of the 48,509 consecutive eye cases treated in the institution. In this it is noticed that the first two columns are much larger than any others. The first and largest column represents the relative proportion of diseases of the conjunctiva, and the second, the relative proportion of diseases of the cornea; and together the two columns include 51.5 of the total number of cases treated. The forceful value of these facts, the report goes on to say, will be better apprehended if we remember that the majority of the affections of the conjunctiva are either communicable or preventable, or both; as is true also, within somewhat more restricted limits, of the diseases of the cornea. Indeed, very many of the diseases indicated by the two columns under consideration are filth diseases, exterminable by proper hygienic precautions. Thousands of victims of communicable, preventable eye diseases have been found in times past in the residential schools and asylums of New York and its vicinity, as well as in other large centres of population, and have gone to make up the vast *clientele* of such institutions as the Manhattan Hospital. The medical board of this institution is a unit in believing that the faithful administration of the law entitled "An Act for the Better Preservation of the Health of Children in Institutions," which was enacted by the New York Legislature last year, will most sensibly lessen the prevalence of these diseases, which are so fatal to vision and so productive of chronic and irreparable pauperism. In this connection the Board of Managers feel constrained to call attention to the fact, however humiliating it may be, that so far as the statistics of the Manhattan Hospital go, American pauperism is relatively rapidly increasing; since of the 9,179 patients treated during the year, 5,586 are recorded as natives of the United States.

The eighty-first annual meeting of the Medical Society of the State of New York was held in Albany the first week in February, and was largely attended. The Merrit H. Cash prize was awarded to Dr. A. N. Bell, of Brooklyn, editor of *The Sanitarian*, for his essay on "Physiological Conditions and Sanitary Requirements of School Life and School-houses." The subject of the President's annual address was "The Achievements in Science and Letters of Men who have been Connected with the Medical Profession," and was delivered by Dr. Ely in the Assembly Chamber at the Capitol. Dr. Alfred L. Loomis, of this city, was chosen President, and Dr. A. M. Phelps, of Chateaugay, Vice-President, for the ensuing year.

P. B. P.

"THE ETIOLOGY AND CURE OF ASTHMA."

Dear Sir:—In the issue of THE JOURNAL for January 29, appeared a short article under the above heading by Dr. Kuh, which is liable to mislead those not familiar with the subject.

1. With reference to the parts which the turbinated bodies bear in the etiology of asthma, the author attributes the discovery to Wilhelm Hack, and inveighs against specialists because they do not give him the credit. The fact is, that the attention of the profession was first directed to this matter by a paper read before the American Laryngological Associa-

tion in May, 1881, by Dr. William H. Daly, of Pittsburg.

Hack's articles on the subject did not appear until many months later in the *Berliner Klin. Wochenschrift*, of 1882, and in his monograph, 1883; therefore, Hack was not the discoverer, and would only ask for the honor of a place among many other faithful workers in this field.

2. In the article referred to, it is claimed that nearly all cases of asthma are the result of disease in the nasal cavities. On the contrary all laryngologists know that only a small percentage of them are so caused.

3 It is also claimed that cauterization of the nasal mucous membrane will cure the majority of cases of asthma; whereas experience shows that it will benefit only a small percentage of them. With reference to the after effects of cauterization some discussion followed the reading of the paper, but it was not sufficient to make the matter clear. By experience we have found that the amount of discomfort following the operation is dependent on the idiosynerasies of the patient, the present condition of his system as indicated by the rapidity with which wounds heal, his subsequent exposure, and the extent of the burn.

There are some individuals, who from inexplicable causes, suffer pain or develop fever from wounds which would not annoy the majority of mankind, and these are likely to have much discomfort after cauterization.

Under certain, not well-defined conditions, small wounds heal very slowly on some in whom at other times cicitrization would be rapid. In such conditions a small burn which would ordinarily cause no inconvenience may be a long time in healing. Patients who are exposed after the cauterization sometimes, in popular parlance, "take a cold," and as a result a wound which would otherwise have healed rapidly may be a long time in closing, and inflammation may extend from it to neighboring parts.

In order to guard against these unpleasant results, care must be exercised not to cauterize too much tissue at one sitting. I have never known serious complications, or great discomfort to follow a single linear cauterization the whole length of the turbinated body, or a superficial cauterization nearly as large as a nickel; therefore wounds of this size may be made when the patient is pressed for time, or when he prefers some discomfort to a second visit to the doctor's office. In no case, however, should the cauterization be more extensive, because of the danger of facial erysipelas, and other unpleasant results. Whenever time and circumstances permit it will be found better to make a linear cauterization of not more than one half the length of the turbinated body, or superficial cauterizations not more than an inch in diameter. If these precautions are followed, the author's statement that there is no noteworthy complication after the operation will be fully verified. Truly yours,

E. FLETCHER INGALS, M.D.

64 State St., Chicago, Feb. 16, 1887.

MISCELLANEOUS.

NECROLOGICAL.—Dr. B. F. Hardy died in San Francisco, November 22, 1886, of diabetes. He was a physician of more than ordinary education and professional skill, and has been a member of the American Medical Association since 1871. He leaves a wife and two little daughters to mourn his early departure. But of him could be said, "He followed virtue as his truest guide; he lived as a Christian, and as a Christian died."

DIED—January 9, 1887, in Milton, Ind., Dr. Joel Pennington, aged 88 years. At the time of his death he was the oldest practicing physician in Wayne County. He became a member of the American Medical Association in 1850. Through all his long professional life he enjoyed the confidence and esteem of both the community and the members of the profession who knew him.

EMIN PASHA, for whose relief Mr. Henry M. Stanley recently left England for Equatorial Africa, is no less a man than the celebrated Dr. Hermann Schnitzler, better known as Emin Bey, and Surgeon-General of the Equatorial Provinces under Chinese Gordon. He succeeded Gordon in the governorship, and has been engaged in bringing a barbarous region into a state of civilization. He has now been shut off from the outer world for three years by the barbarians to the north of him. He is a great linguist, and in addition to his medical learning has an intimate acquaintance with geology, botany, meteorology, anthropology, geography, etc. The little leisure which he has had for the past five years has been devoted to the sick.

THE SPRINGFIELD, MASS., CITY HOSPITAL has had bequeathed to it, in the will of the late Mr. Wm. Merrick, between $75,000 and $100,000.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 12, 1887, TO FEBRUARY 18, 1887.

Lt.-Col. Jos. R. Smith, Surgeon, detailed, in addition to his present duties, as President of the Army Medical Board in New York City, N. Y. S. O. 38, A. G. O., Feb. 15, 1887.

Major W. S. Tremaine, Surgeon, sick leave of absence still further extended four months on surgeon's certificate of disability. S. O. 39, A. G. O., Feb. 16, 1887.

Capt. Geo. McCreery, Asst. Surgeon, granted leave of absence for one month, with permission to apply for one month's extension. S. O. 35, A. G. O., Feb 11, 1887.

Capt. Arthur W. Taylor, Asst. Surgeon, relieved from duty at Camp Medicine Butte, Wyo., and ordered for duty at Ft. Laramie, Wyo. S. O. 14, Dept. Platte, Feb. 12, 1887.

Capt. M. C. Wyeth, Asst. Surgeon, ordered from Ft. Wayne, Mich., to Ft. Barrancas, Fla. S. O. 39, A. G. O., Feb. 16, 1887.

First Lieut. J. Wakeman, Asst. Surgeon, relieved from duty in Dept. Platte, to take effect on the expiration of his present leave of absence, and ordered for duty at Ft. Walla Walla, Wash. Ter. S. O. 36, A. G. O., Feb. 12, 1887.

First Lieut. Edward A. Morris, Asst. Surgeon, leave of absence extended twenty days. S. O. 35, A. G. O., Feb. 11, 1887.

First Lieut. H. S. T. Harris, Asst. Surgeon, ordered from Ft. Clark, Texas, to Ft. Ringgold, Texas. S. O. 16, Dept. Tex., Jan. 31, 1887.

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ORIGINAL LECTURES.

THE CAUSE AND CURE OF INEBRIETY.

Delivered before The Institute of Social Science of New York, February 10, 1887.

BY T. D. CROTHERS, M.D.,

OF HARTFORD, CONN.

Approaching this subject from a scientific standpoint, it is essential to have some conception of its character and magnitude, before any clear idea of the causes and remedies can be obtained. The impulsiveness, degeneration, and insanity of inebriety are characteristics familiar to every one. The magnitude of inebriety no doubt exceeds all previous studies and conclusions. One of these estimates, which, in all probability, approximates to the truth, places the number of alcohol and opium inebriates in this country at 1 per cent. of all the population. This includes the secret drinkers and opium cases who are generally unknown, except to the family physician. With a population of 50,000,000, this would give an army of 500,000 inebriates. Inquiry in almost any direction, would seem to indicate that one inebriate to every hundred persons is not an over estimate. The mortality is very great, and is estimated at over 90 per cent. Thus, not more than one in every ten inebriates die of other disease, and the other nine die from the effects of spirits, either directly or indirectly.

The fact that inebriety is increasing, is conclusive from the fact of increased production and consumption of all kinds of spirits in this country; also the increased number of persons arrested for inebriety in the large towns and cities. These are not mere guesses or statements, but the most probable facts and best authenticated conclusions of to-day. It is clearly evident that a disorder so wide spread must have an equally wide range of causes, and many complex conditions which enter into its growth and development. It will also be apparent that a knowledge of these causes must come from a study of the history of a large number of cases. Such a study must record all the facts of heredity, of the early surroundings, training, growth, accidents, diseases, strains, drains, shocks, losses, climate, food, social and physical environment, and all the various influences which have entered into life. From a large number of such histories many of the principal causes will appear. Thus, from the records of one hundred inebriates, representing all classes, sixty will be found with defective brain and nerve organization from inheritance. Thirty or more of this number will have moderate or excessive drinking parents or grandparents. Twenty will have insane, epileptic, criminal, pauper, idiotic, and eccentric ancestry. Ten will have consumptive, rheumatic, and diseased parents. Of forty who have no prominent history of heredity, twenty-five will begin after attacks of severe disease or physical shock or injury; mental shocks or great brain perturbations, and other similar causes. In ten cases the inebriety can be traced to climatic states, to foods and occupation. In five cases no special causes can be determined; this is obviously the fault of the observer, which a better knowledge will remedy. In all these cases there is often a blending and union of causes; thus head injury and diseases with heredity are united. In another case, conditions of climate, food and occupation are prominent. Nutrient disorders, overwork and exhaustion, or mental strains and heredity, may all be found associated, and all active in the causation. A close examination will show how exact these causes are, and the laws which govern them. Thus, in direct heredity, moderate, excessive, or periodic drinking parents are always followed by inebriate children, either in the first or second generation.

The first generation will be either inebriates or rigid abstainers, and always have marks of defect of some kind.

The second generation will develop inebriety from the slightest exposure. Unless the stream of heredity is neutralized by a current of greater vigor, this generation will be found along the border line of insanity, manifesting many complex symptoms of mental defect.

In these cases some specific degeneration of the brain centres has been transmitted, with special tendency to use alcohols for relief, and low resisting power to all temptations of this kind. Many of these cases escape and never use alcohol, but they have marked defects of body and mind.

Many inebriates are found to have defective parentage, representing all degrees of insanity, eccentricity, and mental oddities; or criminals and paupers, with low intelligence, and defective characters; hysterical, ungovernable passions, and unbalanced organizations. Inebriety in the children of such characters is only another phase of degeneration. Here the drink-impulse springs up almost spontane-

ously from slightest causes; a physician's prescription, the excitement of contagion, etc.

Where the parents are consumptive, rheumatic or have some serious constitutional disorder, inebriety frequently appears in the children from most insignificant causes. In these cases a defective brain and nerve vigor exists, which seeks relief from any source at all hazards.

Another class of inebriates will develop the drink impulse after a head injury—where they are made unconscious by a blow or sunstroke; or where they have suffered from severe, protracted sickness, or sustained profound shock, either mental or physical. Fright, fear, joy, sorrow, falls of all kinds which produce sudden impressions on the organism, seems to lower the vigor, and call for relief from alcohol or or opium. Some change has taken place in the brain centres, and while alcohol and opium brings temporary relief, it hastens and increases the form of degeneration. In these cases the drink impulse may be pronounced from the first use of spirits, or it may grow up more or less rapidly and unconsciously to the victim. Of course every one subjected to such injuries do not become inebriates. Many recover without any entailment; others develop insanity, epilepsy, and various degrees of degeneration. What determining cause makes this difference is unknown.

Another class of inebriates are made so by states of climate, food, surroundings, and occupation. Thus the alternations of extreme heat and cold seem to be active causes of the drink impulse. Firemen, stokers, and others, on Southern steamers which sail from Northern ports, subject to the sudden changes from the frigid air of New York and Boston to the equator, generally become inebriates. A few years ago, Dr. Bowditch, of Boston, pointed out a drink belt, crossing the civilized world, in which spirits were used to great excess, on either side of which inebriety shaded down less and less, into comparative sobriety. In all probability climate is very active as a predisposing cause.

In a certain number of cases of inebriety, bad and innutritious food are the active causes. Thus, a child who has been underfed or overfed will have digestive disturbance and an active predisposition to find relief in some form of spirits. In adult life the same thing occurs; the starved ones and gourmands are prepared to become inebriates on the slightest exposure.

Surroundings and kinds of labor are often active causes of inebriety. This is illustrated in many ways and in almost every neighborhood in the country.

These are only the most general cases, and are combined with many and most diverse influences which develop and keep up inebriety.

Another fact appears from a study of these cases, which is somewhat startling: they all beg'n at a certain point, and pass on down the same road, and uniformly cross the same bridges, reaching the same destination. Of course there are halts, variations, and changes, but the main body of inebriates move along one progressive line, from stage to stage. The expert has only to find out where the case started, and where it is at present, to predict the future. It is here that the scientists realize that not far away, when these causes are known, inebriety will be as thoroughly prevented and stamped out as small-pox can be.

The limits of time prevent other than a mere mention of some of the great underlying causes dependent on the forces of civilization. Thus the brain strains and drains, incident to the rushing, grinding civilization of to-day; the struggle for position, wealth and power, and the effort to adapt ourselves to the new conditions and living which are constantly forcing themselves on us, are steady sources of exhaustion, and preparation of the ground for the growth of inebriety, insanity, and many allied diseases. The errors of birth, the errors of childhood, the errors of training, the errors of surroundings and occupation, all converge to cause a defective organism and unfit for living a healthy, temperate life.

While the increased culture and intelligence of the race drives out the coarser and more repulsive symptoms of inebriety, the mortality is increased, and alcohol is more used for its narcotic properties and to quiet pain. Inebriety is more concealed to-day, and is followed by more allied diseases, and is more maniacal, suicidal, and impulsive. Pneumonia, Bright's disease, heart disease, apoplexy, are some of the names given to the fatal cases of inebriety. From all exact study we find that the causes of inebriety are physical, and can be traced to clear, tangible forces. The further study in this direction establishes this fact beyond doubt, and reveals vast stretches of unknown causes and conditions entering into inebriety, awaiting some future discovery.

In the cure of inebriety there is probably more agitation and interest than ever before. The efforts of societies and parties, of the pulpit and rostrum, with the increasing books and papers from the press, have never been more active than to-day. Yet reports show that inebriety is increasing, and that more spirits are made and consumed every year.

All the temperance efforts and legal means for the cure and prevention of inebriety are based on the theory that it is a moral disorder which the victim can control at will, or a wicked habit that he can continue or put away at his own pleasure. This theory of inebriety is theoretical, and embodies the same error which follows every new advance of thought, namely, explaining all human action from some moral or theological standpoint. Thus the phenomenon of insanity was explained as a possession of the Devil, and the victims were supposed to enter into a compact with evil spirits, voluntarily. The remedy was severe punishment. Public attention was occupied for ages in persecuting and punishing the insane and epileptics on this theory of the causation. Law, religion, government, and public sentiment all failed in the cure and prevention by this means, and these diseases went on unchecked, simply because the real causes were unknown.

Inebriety is regarded in the same way as wickedness, and the same means are urged as a remedy. Over fifty thousand inebriates were sent to jail in 1886, and punished as willful and voluntary drunkards. Armies of moralists and temperance people

are pledging and praying the inebriate to stop drinking, and exercise his will, and be temperate and well again. Yet all such efforts fail, and often tend to increase the very condition which they seek to remedy. They fail because they are based on a false assumption of the causes, and not on any accurate study of the history or real condition of the patient. A new era is dawning for the inebriate. His diseased condition, and the need of special medical care in special surroundings, is a truth that is spreading slowly and surely in all directions. Not far away in the future inebriety will be regarded as small pox cases are now in every community. The inebriate will be forced to go into quarantine and be treated for his malady until he recovers. The delusion that he can stop at will because he says so, will pass away. Public sentiment will not permit the victim to grow into chronic stages; the army of moderate and periodic drinkers will be forced to disappear, and the saloons which they have supported will close in obedience to a higher law than any prohibition sentiment.

Public sentiment will realize that every inebriate is not only diseased, but dangerous to society, to himself, and all his surroundings, and demand legal guardianship and restriction of personal liberty until he recovers. When these poor victims realize that society will not tolerate their presence or allow them personal liberty in this state, they will seek help and aid before they reach extreme stages.

This is the teaching of all modern science—to check the disease at the beginning, to seize the poor waif on the street and the rich man's son, who are just at the beginning of inebriety, and force them into conditions of health and sobriety, to save the one from becoming a prey on society and a burden to the producer and tax-payer, and the other from destroying society and himself, and leaving a tide of misery and sorrow that will continue long after. When society shall realize and act on these facts, the great centres of pauperism and criminality will be broken up. This will be accomplished by the establishment of work-house hospitals, where the inebriate can be treated and restrained. Such places must be located in the country, removed from large cities and towns, and conducted on a military basis. They must have all the best appliances and remedial means to build up and restore the debilitated victim. They should be military training hospitals, where all the surroundings are under the exact care of the physician and every condition of life is regulated with steady uniformity. Besides the medicinal and hygienic treatment, there should be educational and industrial training, and each one should be employed, both in body and mind, every day. He should be placed in a condition for the best culture and building up of the entire man. Every defect of body and mind should be antagonized and remedied as far as possible. Each case should be an object of study to ascertain the real state and the means to strengthen and improve it. These hospitals should be built and conducted entirely from the license fund or the taxes on the sale of spirits. They should in a large measure, be self-supporting from the labor of the inmates, and independent of the tax-payers. These places would most naturally divide into three distinct grades. The first class of hospitals should be for recent cases, where the inmates can be committed by the courts, or voluntarily commit themselves for one or two years. The second class should receive chronic cases for longer terms of treatment—from one to three years. The third class should be for the incurables, or those who give no reasonable promise of restoration. The time should be from five to ten years and life. The latter class should be thoroughly organized into military habits of life and work, and kept in the best conditions of forced healthy living. Employment and mental occupation should be carried out literally as a stimulus to strengthen the body and mind. Where it was possible the rewards of his labor, beyond a sum to pay for care, should be turned over to his family and friends or held in trust for him. He should be encouraged to healthy work and living by all possible means and surroundings. The semi-chronic cases should be treated substantially the same way, only occupation and training of the mind and body should be more suited to the wants of each case. The amusements should also be of a sanitary character.

The recent cases should have the same exact discipline, filling the mind with new duties and new thoughts, and suited to build up the exhausted, overworked man, as well as the gourmand and underworked idler. All persons should pay for their care if possible, and, be required to render some service which would be credited on their bills. These hospitals should be literally quarantine stations, where the inebriate can be housed and protected and society saved from the losses following his career.

If ten thousand poor chronic inebriates could be taken from New York and placed in such hospitals, and made self supporting, who could estimate the gain to society, to morals, to the tax-payer, and to civilization? This can and will be done in the near future. If ten thousand semi-chronic cases of inebriety could be taken from New York and quarantined two or five years in such military hospitals, and made to pay for their care by labor, who could estimate how many would be returned to health and temperate living again? Who could estimate the relief from sorrow, misery, wretchednesss and losses? This will also be a reality a little further on. If ten thousand recent cases of inebriety could be taken out of their surroundings in New York and placed in these hospitals, where forced conditions of the highest degree of health and vigor are maintained, a large percentage would recover. The gain to society and the world would be beyond all computation. Now each one of these propositions and the practical working of a military hospital is a reality, based on evidence constantly accumulating. Every prison, penitentiary, or hospital, every asylum or home where inebriates come under care and restraint bring such evidence. They show that such a method of treatment, combining the varied experiences of all these institutions can be made practical and is the only scientific way of solving this problem. To

banish the still and saloon does not prevent inebriety or cure the inebriate; it only changes the direction of the drink current. But quarantine the inebriate in a hospital, as one suffering from contagious disease, and the victim is cured, the spread of the disease is prevented, and a knowledge of the causes ascertained, from which the remedies can be known and applied. To punish the inebriate as a criminal cannot cure his inebriety, but it always unfits him for living a healthy, temperate life thereafter. To attempt a cure by faith and prayer is to depend on false hopes, the failure of which is followed by increased degeneration. To attempt any form of treatment without knowing any other fact except that the victim drinks to excess is always to blunder and fail.

The time has come to recognize the physical conditions which enter into all cases of inebriety, and to apply exact remedies along the line of nature's laws and forces.

The late Dr. Bellows, in an address delivered ten years ago, said: "Inebriates, like criminals and insane, will all be eventually restrained in hospitals, and treated with medical and physiological skill the moment their liberty becomes dangerous to society. The terms of their confinement will be limited only by the possibilities of cure and the conditions of their disorder. Society gains nothing by holding prisoner for an hour any man who is fit to be at large. Liberty and human rights gain nothing by allowing any man to be at large for a moment who is destroying himself, his family, and his neighbors. What we need is what we are fast gaining, namely, a possession of the tests and gauges of the fitness and unfitness, and we shall be able to treat the inebriate successfully the same as in other diseases."

As scientific men the question comes to us, can this great army of five hundred thousand inebriates in this country be the outburst of a vicious element in human nature? If this is so, religion and civilization have failed. If this army of inebriates sprung from physiological and psychological causes, then the problem of cure and prevention is a question for science. If inebriety is a vice and sin, then the Church and State must apply the remedy.

Insanity has been studied for over a century by many able and learned scientists, and yet only a few facts have been established, and preparation made for more exact study. The realm of the unknown has been scarcely penetrated. Inebriety, an infinitely more complex disease, has never been studied. Only a few pioneers are approaching it from a physical standpoint, and their views of necessity must be outlines of laws, forces and facts, that are yet to be discovered. Some of these outline facts may be summarized as follows:

All accurate study of the inebriate indicates a distinct range of causes, both physiological and psychological, from which inebriety springs. When the histories of inebriates are compared, they are found to follow a regular line of progress, obeying a certain order of events, from the beginning, development, progress, decline, on to extinction. This march is governed by conditions and forces of which we have only a faint conception. Heredity, disease, injury, starvation, neglect, are only the general names for some of these forces.

In the cure of inebriety all study of cases points to a physical causation to be removed by physical means. Work-house hospitals as quarantine stations, where every condition of disease can be treated, give the greater promise of relief. Here the victim is removed from all exciting causes, and protected from himself and others; and here we can understand some of the causes beyond the saloon, and so-called free will, and deceitful heart.

From this very general review of some of the causes of inebriety, and the means of cure, it is apparent that, like the early Northman, we have only touched on the shores of a vast continent of the unknown, which, not far away in the future, the march of science will disclose.

ORIGINAL ARTICLES.

TUBERCULOSIS OF BONES AND JOINTS.

Read before the Northwestern Medical Association, at Lima, Ohio, December 9, 1886.

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Anatomical History.—Very few subjects in surgical pathology excite at this moment as much interest as the tubercular affections of the bones and joints. This is especially shown by the many contributions in periodicals and monographs of late years treating very elaborately upon this question. That this subject is also of very great practical importance, no physician or surgeon who has met such cases will deny. The knowledge of tuberculosis of the bones may be traced to the earliest times. Hippocrates and Galen mention tubercle of bones in no indefinite terms, and the general observation that phthisis is at times the more or less direct outcome of surgical accidents or diseases did not escape their eyes. It must not, however, be imagined that they had a clear conception of its nature; they were not enabled at that time to distinguish between scrofulous, syphilitic and cancerous tubercles. In 1735 Traugott Gerber, in a treatise, ascribed the formation of spinal curvature to vertebral tuberculosis. It was, however, reserved to the genius of Laennec, who profited by the previous labors of Bayle, to demonstrate that tubercles were the anatomical basis of phthisis, and that most of the lesions, considered scrofulous, were tuberculous. Surgery took hold of this discovery, and Delpech was the first one to study it in its surgical aspects. Nichet soon wrote upon tuberculous osteitis, and Nélaton, in his memorable treatise, distinguished two forms of tuberculosis of the bones, the encysted tubercle and the tuberculous infiltration.

Like all new ideas, this theory equally had to go through the crucible of severe and carping criticism, it was opposed and defended with like vehemence by men equally high in merit and authority. Buhl had observed that acute miliary tuberculosis was in most

cases combined with old cheesy or purulent centres, and as Rokitansky had some time previously traced out the causal connection between such foci and miliary tuberculosis, the first author came to the conclusion that the latter affection was an infectious disease, due to the absorption and spread of noxious agents from old cheesy inflammatory centres of the lymphatic glands, lungs, bones, etc. A very important step was gained in this direction when, in 1865, Villemin, by way of experiment, demonstrated the inoculability of phthisical products upon animals, and showed that caseous material was just as virulent as the gray tubercle. Köster, in 1869, showed that the fungous masses in diseased joints were of tuberculous origin. He furthermore described the giant cells, which were until recently considered pathognomonic of tubercle. Subperiosteal cold abscesses were also found by Kiener to have the tuberculous character. Volkmann at the same time showed that in white swelling the foci found in the epiphysis exhibited the nature of tuberculosis. In 1878 Schüller drew attention to the fact that in scrofulous subjects traumatism had a tendency to produce the tubercular affections known as white swelling. A number of experiments upon animals, which he caused to eat or inhale tuberculous matter from various organs, and which subsequently received some bruises or injuries about their joints, seemed to confirm his views. They all exhibited about the injured joints the pathological conditions which may be brought under the term tumor albus, and in a very short time perished from general tubercular infection.

Since that time many contributions relating to this question have been furnished, chiefly from French and German sources. The germ theory was brought in connection with the etiology of tuberculosis some time before Koch made his famous discovery of the bacillus tuberculi; at least, I heard my distinguished teacher, Prof. Klebs, as early as 1871, make the prediction more than once, that in no distant future some investigator would furnish the evidence that a parasite was inseparably connected with the cause of this disease. It was, therefore, no mere accident, but the fruit of well planned work and laborious research, when Koch was able to announce to the world that he had found that destructive enemy of the human race, as well as a great part of the animal world, in the shape of a minute rod. The memory is too fresh yet to forget how this statement was received; how every microscope was called into requisition, and how every observer, whether trained or mere amateur, felt himself fully competent to pass judgment upon the correctness of Koch's observation. Suffice it to say that almost every pathologist of note, and amongst them many who at first held an opposed view on the matter, to-day look upon the bacillus tuberculi as the univocal criterion of tuberculosis. To those who are always eager for new facts and suggestions, be they of theoretical or practical import, it may be of interest to hear that Baumgarten very recently succeeded in studying the finer working of this low organism, and its way of bringing about the characteristic morbid changes. I cannot here go into the details of his method of investigation, but he succeeded in showing, by inoculation of bacilli into the anterior chamber of the eyes of a number of rabbits, that the immigration of these parasites into the tissue spaces or into the fixed cells, never into the leucocytes, is the first step. Then they begin to multiply and spread, so that in about ten days tubercles will crop up.

Tuberculosis of the bone is principally limited to the epiphysis of the joints and to the spongy tissues of the bones, as, for instance, in the short bones of the hands and feet (spina ventosa). This is somewhat in contradistinction to another infectious disease of the bones, the acute osteo myelitis, which latter affection has a predilection for the long shafts of the bones. Exceptions, however, occur in both affections, and it requires some practice to make an accurate distinction between the two. Nélaton distinguished two forms of pathological appearances, the encysted tubercle and the tuberculous infiltration, which distinction is still in use by a great number of pathologists. Kœnig, however, who has of late years paid special attention to this affection, found that in its gross aspect it presents three different forms: the granulative tuberculosis, the tuberculous necrosis, and the infiltrating, progressive form. We find in the first variety generally a small spherical or tubular defect in the bone, of the size of a hempseed to that of a large pea, or even a small hazelnut. The appearance of the contents is at times of a reddish, gray granulation, at other times of a yellow or grayish-yellow color, and not infrequently the whole focus is of a cheesy nature. We nearly always detect, with the eye alone or under the microscope, the finer residue of bone. The walls of the cavities may be soft, or there is a sclerotic, cicatricial condition. The granulations, as long as they have not assumed a pronounced cheesy character, reveal under the microscope a multitude of characteristic tubercles with epithelial and giant cells.

The second variety, the tuberculous necrosis, differs from the necrosis of the acute osteo-myelitis in its not being entirely separated from the healthy bone, as it has some slight connections with it; besides this, it is not generally found in the long shaft, but mostly in the spongy parts of bones, in the epiphyses of joints, in the vertebral bodies, also in the flat bones, like shoulder-blade or skull. It has a wedge-shaped appearance, with its base towards the joint and the apex towards the medullary cavity. As the shape of the bone is often not at all changed or enlarged, we may have some trouble in finding the sequestrum in the living bone, but its dirty-white or yellowish color and its presence of purulent fluid or soft cheesy masses, on the cut surface, will aid us greatly in its discovery. In some cases, however, it is so intimately connected with the bone, that only a very thin layer of tuberculous granulations separates it. We then may have to use some force in lifting it out, even with the chisel. The bone becomes thickened in case the joint is much used, or after a fistula is established. The resemblance of the sequestrum to infarcts, and the way in which it is formed, incline Kœnig to the belief that it is of embolic origin.

As to the fate of such tuberculous foci, they may undergo a retrogressive metamorphosis, the tubercu-

lar granulations may be transformed into simple normal granulations, and ultimately into cicatricial tissue. This is especially the case in the smaller foci at some distance from the surface of the joint. But there are cases in which the healing process is not complete, where some tuberculous granulations are left unchanged, and these may then lighten up at any time and bring about what we might call a recurrent tuberculosis. A large sequestrum will never heal. If the tubercular centre be seated right under the periosteum in the neighborhood of the joint surface it, as a rule, will penetrate into the joint and then produce the characteristic tubercular affection of the joint.

The course of the disease is very much affected by the condition of the tuberculous foci; whether they have a dry granulating, or a soft cheesy appearance. The former variety has a tendency to form cicatricial surroundings, and thereby remains localized, whereas the soft form becomes cheesy and purulent, rapidly diffuses into the surrounding tissue and there sets up identical changes; as a result we then have the chronic or cold abscess. Why we should have in one case the dry form, in other cases again see the cheesy or purulent variety, we have so far not been able to determine. We are nevertheless aware of one fact: that the quantity of matter is not dependent upon the extent of the infectious focus. We see sometimes the largest abscesses connected with the smallest tuberculous centres, and again, a number of multiple foci of granulation and sequestrum without a drop of matter. The idea that another special infection had joined hands with the tubercular infection, could so far not be verified by experiments upon animals, as inoculations of pus from such tuberculous foci produced exclusively the purest form of tubercles.

The two forms mentioned above generally preserve their original characteristic; that is, the dry form always remains dry, and should it become purulent it has very little tendency to spread. We need scarcely mention that these relations have an important bearing upon the prognosis of these local processes, but they are not less important as regards the question of general infection.

The third form, that of infiltrating progressive tuberculosis of the bones, is of rare occurrence, but still frequent and grave enough to deserve special mention here. It is especially found in cases in which tuberculosis is complicated with open suppuration. After having destroyed the cartilage of a joint it may find its way into the surface of the joint-ends, and from there penetrate deeper into the shaft of the bone. The medullary cavity especially seems to be a favorite seat for it. It chiefly characterizes itself by the irregularity of its invasion; the healthy bone may show different irregular islands of infiltration of the same color as the tuberculous sequestrum, whilst the spongy bones may be studded over alternately with yellow infiltration or small abscesses. The medullary cavity especially is apt to be filled with smaller or larger abscesses surrounded by a pyogenous membrane, so that the process is aptly described by the name "true osteo-myelitis tuberculosa purulenta." It is fortunate for conservative surgery that such cases are rare, as prognosis is obviously a bad one. From what we have mentioned before, we know in what manner the infection of the adjacent region of a focus of the bone takes place, and why we sometimes find large tubercular abscesses at some distance from the source of suppuration. The cold or tubercular abscess spreads through the cellular tissue, and its walls are formed by a fibrinous layer derived from the pus. This pyogenous membrane shows plainly the tubercular granulations, and allows us even to study the development of tubercles. The locality of the focus generally determines the question whether we are going to have tuberculosis of the soft parts or of the joint itself. The majority of cases which have been considered under the name of white swelling, or fungus articuli, owe their origin to some tubercular focus seated in the joint-ends which either directly or indirectly breaks into the joint. True, the synovial membrane may be primarily affected, but the osteal tuberculosis is much more frequent. We find there the granulative foci especially represented, which may be located under the cartilage or in the vicinity of the synovial membrane, and only a few lines of territory may decide whether they are going to break into the joint or will remain a parosteal abscess. The tuberculous sequestrum is not generally accompanied by suppuration; it remains dry for a long time and becomes polished or eburnated from extensive use of the joint. Its smoked yellowish appearance will aid in its detection.

Viewed in the light of modern pathology, the terms "tumor albus or fungus articuli" are not sufficient to cover the ground fully, and might therefore easily be dispensed with. The name *fungus* or *granulating inflammation of the joint* owes its origin chiefly to the proliferation of soft, young connective tissue which, in addition to the tubercles, is found spread over the synovial membrane. The soft tissue surrounding the joint becomes swelled, and as the fatty subserous tissue becomes atrophied the joint assumes a spindle-shaped, flabby appearance. Extensive use of the diseased limb or the presence of fistulæ, as the result of small abscesses, will increase the swelling of the joint, and finally leave the soft parts in a state of lardaceous fibrous induration. In extreme cases the periosteum becomes thickened and the indurated parts gradually adhere to the skin, which, in consequence of atrophy, then presents that smooth, shining, anæmic look which deservedly gave it the name white swelling. But we may safely assert that since such cases have received more careful treatment, principally immobilization and rest, they have become somewhat scarce. Instead of proliferation of young tissue, we may also have a dropsical exudation into the joint as the result of the same amount of irritation. This *hydrops articuli tuberculosus* is generally the result of diffuse synovial tuberculosis, and in almost all obstinate cases such a condition may be suspected. The fluid in such cases may be as clear as water, or mixed with pus corpuscles, it may also have a fibrinous deposit; in fact, exhibit all the varied products of coagulation. These coagulations may appear as a soft white membrane, or in the shape of rice bodies. At one time it was supposed that cases which showed these rice bodies were free from tuberculosis,

but recent observations seem to prove the contrary.

We should not forget to mention that condition which is embraced under the term tuberculous empyema of the joint. It should be distinguished from that form of cheesy suppuration caused by some focus of cheesy granulation. The empyema we speak of is the product of multiple miliary tuberculosis scattered over the inner surface of the synovial membrane, filling the joint with tuberculous matter and coating it with a tuberculous membrane, which can be readily scraped off. The cartilage seems to be at first exempt from tuberculous infection, it only becomes involved after the destruction of the bony or synovial parts of the joint has made progress. As a rule, the tuberculous foci are single; they may, however, appear in a multiple form in the granulating variety, and oftener still in the caries sicca. General inflammation of a tuberculous character will follow their perforation into a joint, unless the point of perforation becomes occluded by the inflammatory products of the connective tissue, as is often seen in the knee joint of children. If the inflammation involves the whole joint it may exhibit the form of fungus, dropsy or cold abscess. The tubercles are first not spread over the entire joint, even if the latter is filled up with soft, loose granulations. These granulations are simply the product of inflammatory irritation of the joint, and may be free from tubercles. The parasynovial tissue presents a gelatinous appearance, especially where extensive layers of subsynovial fat are formed.

Primary diffuse synovial tuberculosis may occur simultaneously with, but independently of, osteal tuberculosis. Its picture is varied; in some cases, where during life no sign of inflammatory change was manifested, we find subsynovial gray tubercles, and as these are mostly found in connection with acute general tuberculosis, they are more of anatomical than practical interest to us. Somewhat related to this form are the cases of dropsy with fibrinous deposits, or rice bodies. But the form which the surgeon meets most, is exhibited in the cases of diffuse tuberculous granulation. We find there numberless gray or grayish-yellow tubercles visibly distributed through the whole thickness of the synovial membrane, and even through the subsynovial tissue. The synovial sac may be filled with transparent liquid or pus, and its granulating surface be coated with a pyogenous membrane. Para-articular abscesses almost invariably owe their origin to some focus in the bone, but there are cases in which tuberculosis, which existed in the joint without suppuration, finally perforated the joint, and then ended in cheesy suppuration. Careful examination will generally detect some point of communication with the joint.

A very rare form, which will often test the diagnostic skill of a surgeon, is what we call the nodular form. If we were justified in classifying tubercles with tumors we might bring this form under the head of tumors. Its seat of preference seems to be the knee joint, also tendons and their sheath (bursa in the carpal joint). They may be of solitary growth in the capsule of the knee joint, and seem to originate from the fibrous portion of the synovial membrane, reach the size of a pigeon's egg, with flat surface. Their color is grayish red, studded with light gray, small nodules, the size of a pin head. An abundance of tubercles are found on their surface or in the richly vascularized layers. Such cases are accompanied with dropsy and fibrinous deposits.

Clinical History.—As the question of tuberculosis of the bones and joints is of somewhat recent origin, its clinical history is necessarily still incomplete. Tuberculosis may develop primarily in the bone itself, or, by way of metastasis, be transmitted there from other organs. Just how it enters into the system we have so far not been able to determine. But from experiments and from the fact that it is so frequently found in the lungs and in the thoracic duct, we may safely assume that the lungs and stomach especially serve as entrance to the virus. Very recent observations even seem to sustain the theory that tuberculosis may be communicated to healthy persons through wounds. About a dozen cases are on record which leave no doubt that the virus has been inoculated into fresh wounds. In the majority of cases we find tubercular deposits in some other organs, aside from the bursa or joints, and we may infer with some certainty that a metastasis from these organs has taken place. There is, however, a certain percentage of cases (Kœnig found about 17 per cent.), where the bone alone was the seat of tuberculosis; at all events, it was impossible to find any other organ affected. Undoubtedly it will always be difficult to say whether trauma alone in some cases, without the presence of some tubercular focus in the body, will be sufficient to produce such specific changes in the joints.

But, as we are justified in reasoning from analogy, we might use acute osteo myelitis as an example. This affection sometimes closely follows injury, and yet it would hardly be safe to assume that an infectious centre was lodged in the body previous to the attack. It would be much more plausible to think that the poison was taken up into the system about the time of injury, either by inhalation or ingestion, and carried to the place of least resistance. The question whether tuberculosis can be inherited will engage the attention of our investigators for some time yet. The opinion that it is not tuberculosis itself, but simply a disposition to it, which can be transmitted from parent to child, seems at present to predominate. Nevertheless, some recent experiments on rabbits with a view to this point have demonstrated the presence of the bacillus tuberculi in the first fœtal stages of these animals, and these experiments strongly favor the view of direct transmission of tuberculosis. We all know that scrofulous children are especially subject to affections of the joints, but at present there seems to be a tendency amongst some weighty authorities to drop this word, and to consider the changes found in such cases under the head of tuberculosis. The experiences reported by such men as Billroth, Volkmann and Kœnig, in fact, seem to justify this step. Kœnig mentions the case of a woman who suffered from fungus of the ankle when she was 10 years old; at the age of 70 the foot became so painful that it had

to be amputated. He found in the old encapsuled focus of the tibia distinct signs of tuberculosis, and patient eventually died from tuberculosis of the lungs. Volkmann reports similar experiences, and Billroth does not hesitate to say that very few such cases reach an age higher than 40 to 50 years; that secondary tuberculosis is generally the final issue. A low state of nutrition especially predisposes to such affections, but still we also meet them in well nourished subjects. Whooping-cough, measles, scarlatina, and eventually lupus, seem to prepare the soil for its development.

As to the course these tuberculous processes may take, we have already mentioned before that some have a tendency to heal, or at least become latent to such a degree that we consider the patient cured. These are especially the cases with the formation of firm granulations with a tendency to cicatrization, less so cases with large wedge-shaped sequestrum. Some cases even, where suppuration has gone on, may furnish a comparatively favorable prognosis. But with all this we must not forget the fact that, in the course of months or many years, some new exciting cause may lighten up these processes again, and finally destroy the patient under the symptoms of miliary tuberculosis.

The clinical picture of tuberculous affections of joints is by no means a uniform one; on the contrary, full of variety. It may serve a practical purpose to divide it into three distinct groups:

I. Tuberculous dropsy or synovitis.
II. Tuberculous fungus.
III. Cold abscess of the joint.

I. *Hydrops tuberculosus* is the rarest form of the three, and it may occur in cases of diffuse synovial tuberculosis with moderate swelling or with proliferating changes of the synovial membrane. In these latter forms we have fibrinous deposits in the shape of loose bodies or organized layers, which may gradually be changed into polypoid tumors. It may further occur in cases of circumscribed nodular, as well as diffuse fungus, granulative tuberculosis of the synovialis, but in the latter form the soft swelling of the membrane seems to be more prominent than the dropsy. The local symptoms are those of exudation into the joint, in conjunction with the signs resulting from the thickening or tumors of the synovialis. But as the exudation changes in quantity, the basis of clinical distinction rests more on the different forms of tuberculosis, since they are the cause of this exudation. Where the synovialis is but slightly changed, the symptoms are simply those of dropsy of the joint. The especial characteristic of this dropsy is that, after compression or puncture, it has a tendency to return after some little time. If we examine the joint after the exudation has left it, we detect a certain degree of synovial swelling, especially so in the upper recesses or near the lateral insertion of the capsule of the knee joint, there we find sometimes a solid swelling which is easily movable under the finger. In severe cases we also find, on moving the joint, a grating sound, and can detect prominences and tumors quite distinctly. Fever is not present. So far we are not able to say whether a spontaneous cure can take place or not. It seems, however, not very improbable, when we see so many cases of chronic dropsy with swelling of the capsule get well after the application of blisters, tr. iodine, or compression.

II. *Tumor albus*, or granulative tubercular form. —This is the most frequent form of joint affections, and some authors have devoted so much space and time to its description, that they were interpreted, by not a few, as denying the existence of any other form of joint affection. But even the enthusiasts admit that besides tuberculosis, other joint affections, as the result of typhoid fever, scarlatina, measles, and above all, acute osteo-myelitis or syphilis may produce similar symptoms. Surgeons skilled in differential diagnosis should, however, be able to make the necessary distinction; and moreover, you will have a hundred cases of the tubercular form before you meet with one case from the other causes. Acute epiphysial osteitis may give us the most difficulty in diagnosis, having great resemblance to this granulative form. A careful examination into the etiological factors, however, as well as the acute febrile condition, may help to clear up any doubt. In the majority of cases it will be impossible for us to decide whether we have an independent tubercular synovitis, or one resulting from affection of the bones. The knowledge that osteal processes occur a little oftener than synovial, will not serve us much as a guide in an individual case.

As we have already mentioned, this affection may exhibit clinically different forms. One form, for instance, is characterized by dry, firm granulations which have a special tendency to cicatricial contractions. This form may result in destruction of the epiphysial surface, and may in this manner interfere with the mechanism of the joint, but the tubercular process has very little tendency to spread into the parasynovial tissue, or to the formation of an abscess. If suppuration should occur, we find only the circumscribed (para-articular) abscess. Very little swelling is generally noticed; in not a few cases we even gain an impression as if the joint was in a state of atrophy, as, for instance, in the knee and hip joint of younger subjects, and especially characteristic in this respect is the shoulder joint by its rapid waste. The shoulder then loses its round shape, and we find the head of the humerus in close proximity to coracoid process, the knee becomes deflected outwards and dangling, and in the hip joint the line of the trochanter is raised, the extremity becomes slightly shortened. In another class of cases we find the tuberculous granulations soft and with a tendency to cheesy granulations. In the more advanced cases these processes perforate the synovial membrane and set up a cheesy focus or a circumscribed abscess in the para-articular tissue. The joint after much use will swell considerably and become spindle-shaped, the skin looks anæmic, from being grown to the subjacent tissue, so we have a veritable tumor albus. Fortunately, these extreme cases are to day not as frequent as they were years ago, owing to the improved methods of treatment, especially prompt immobilization. We occasionally meet cases where the granulations are so soft that it

will be difficult to distinguish it from an abscess. Practically this will be of no serious consequence, as they sooner or later are followed by suppuration. If such abscesses do not reach a large size they may, by strict immobilization of the joint, become absorbed, but more frequently they break open and leave fistulæ in different places about the joint.

So long as these fungus processes are unaccompanied by suppuration, patients are generally free from fever, except after abnormal exertion or surgical interference, as, for instance, an attempt to straighten a contracted joint. As soon, however, as we have signs of the formation of an abscess, we have a rise of temperature in the evening, and in some cases also in the morning. Various causes for contraction of a joint have been adduced by different surgeons without really explaining all the points with full satisfaction. Habit, or the way of using the joint, seems to have most to do with its position. A slightly flexed position is generally assumed to rest the joint, so it very probably, in an inflamed condition, relieves the tension of the capsule and in this way lessens the pain. Mechanical influences, as the weight of covers and the position in bed, should also be taken into account. If the contractions have established a certain degree of displacement we may infer a corresponding degree of destruction.

Pain may in some cases be only slight, whereas in others it is excruciating. In cases in which it is intense we may expect to find a grave lesion of the bone. This especially is true in the hip joint, where a quick, slight blow on the end of the foot or on the patella, with knee in a flexed position, or a push of the leg in the direction of the joint, will evince severe pain. If a joint, which has been hitherto painless, should suddenly become painful without any external cause, we may assume that an osteal depot has broken through into the joint. The presence of painful spots about the joint-ends not infrequently points to a focus of the bone. Our diagnosis becomes more definite when these spots, besides being soft and impressionable, show a circumscribed defect in the tissue, and especially complete will it be if we find a larger soft granulative focus or a small abscess. Such a diagnosis will be an essential guide in our treatment.

III. *Cold abscess, or purulent tubercular synovitis.*—In this form we generally find, after having scraped off the pyogenous membrane, the synovialis studded over with miliary tubercles. This membrane is largely distended, as we commonly find it in dropsy of the joint. It is mostly found in the knee joint less frequently in the hip, and principally amongst children. Prognosis is generally bad.

The healthy appearance of a patient should not prevent us from making a diagnosis of tuberculosis of a joint, if the characteristic signs are present. We experience most difficulty in this respect in cases which have been considered under the head of tuberculous dropsy, as their external appearance differs very little from simple dropsy of the joint. Its resistance to the different forms of remedies only, and its tendency to relapse, will strengthen our opinion on this point. Puncture of the joint may also give us some light, since the emptied fluid is not as clear as in simple dropsy, and is often mixed with decaying pus corpuscles and fibrinous deposits in the shape of grating membranes or rice bodies. It can be distinguished from arthritis deformans by making generally its appearance between the ages of 16 and 40 years, and furthermore, it leaves no deformity of the joint, is also frequently combined with tuberculosis of other organs. Cases with circumscribed tuberculous fibroma may be confounded with tumors of sarcomatous, lipomatous or syphilitic nature. Sarcomata, generally, are pedunculated, but still, in some cases, we are left in doubt until we operate. Fortunately, the treatment is the same, so that a doubt in diagnosis is of no serious consequence. In cases of syphilitic gummata, if every other diagnostic point will fail us, iodide of potassium will in a few weeks clear up all doubt in the matter.

Cold abscess of the joint occurs in persons whose system has already been reduced by tuberculous processes of other organs; it is also generally accompanied by fever, showing the curve of hectic fever. In external appearance it may resemble simple dropsy of the joint, but the synovial membrane is more thickened. The form considered under the name tumor albus, although its clinical picture is varied, generally presents no difficulty in diagnosis. Its spindle-shaped appearance is somewhat characteristic for that affection, and very little doubt is left us after circumscribed suppuration or fistula are combined with it. Acute multiple osteitis might be mistaken for it, but this affection is of rare occurrence, the processes are also multiple and found more in the shaft of the bone; in fact, in several bones, its history at the same time will be of some assistance. Syphilitic affections of the joint may show some resemblance at first, but the characteristic look of the ulcers or cicatrices usually found, will soon settle our doubts. Those forms which occur after infectious diseases carry already a valuable diagnostic factor with them in their history.

Caries sicca, where joints are in a state of dry, granulating atrophy, from cicatricial shrinking of the capsule and bones, may sometimes be mistaken for a neurosis of the joint. A careful examination, however, will reveal the wasted condition of the joint-ends, and consequently some shortening of the parts. This form is mostly found in younger persons at the shoulder, knee and hip joint.

As to prognosis, we may state that the hope of curing the local processes of a joint should not be excluded in any case. But the more these tuberculous granulations have a tendency to decay and the more extensive such a focus may become, the graver the case will be. Suppuration may also enhance the danger in a case, especially as septic infection may combine with the result. If, however, we succeed in getting a patient over this danger, cicatricial contraction may bring about a favorable termination, provided the deeper structure of the bone is not involved. But, however favorable the result may seem to be, we must never forget that tuberculosis may be present in a latent form which years after may lighten up again and lead to further destruction. Billroth's observations and those of a number of other surgeons,

although very gloomy, are no doubt correct. He found that most of his cases, which he thought cured after resection or amputation, exhibited after a few years signs of tuberculosis in other organs or had meanwhile died from that cause. He thinks that such patients seldom reach an age above 40 or 50 years. Caries sicca seems to give a better prognosis as to life, but not so favorable as to the use of the joint, since it is apt to lead to anchylosis. Children are more favored in point of prognosis than adults. As long as we find pain in the joint on pressure or after use, even after all the swelling has subsided, we must still suspect some mischief.

Treatment.—Even before the tuberculous nature of white swelling was demonstrated, surgeons, with sound instinct, instituted a treatment similar to the one followed out in tuberculosis of other organs. Preparations of iodine, preferably iodide of iron, mercury, arsenic and cod liver oil, saline and sea baths, have for a long time been in use, not on account of their specific effect, but principally with a view to raise the state of nutrition. But, after all, we are compelled to look to local treatment for better effect. Absolute rest of the joint is without any doubt the prime condition, especially in cases with a tendency to abscess. Plaster-of-Paris, or some similar bandage, unites with the immobilization of the joint the advantage of circular compression. But it is indispensable to put the leg in the proper position before bandaging and to correct any contraction. For the latter purpose weight and pulley are the best expedients in the knee and hip joint; forced redressment, however, under anæsthetic may also have its proper place—in some cases it even seems to have a more curative influence, owing to the inflammation set up by it. After contracture has been removed a plaster-of-Paris bandage is certainly the most convenient. Massage has so far not fulfilled our expectation in these cases; inunction, however, of iodine or mercurial preparations, also application of cold, may occasionally be of some benefit. Injections of carbolic acid into the joint have rapidly been abandoned. Ignipuncture of the joint, at one time highly extolled, seems only to be practised now by a few.

Whatever we may do in the way of conservative treatment, it will always require many months, and even years, for recovery, and then we find that some cases need a still more radical procedure. We may use conservative measures in younger persons, with the expectation of good results, when there is little swelling and the function of the joint moderately impeded; so also in the dry granulating form. The formation of a small circumscribed abscess, accompanied with some pain, is no special cause for discontinuing this plan of treatment. Even the graver forms of fungus may derive some benefit from it as long as there is no extensive suppuration, but if the latter should occur, with considerable pain and signs of displacement, a more radical method is called for. The social condition of a patient will also be of some influence in our decisions. A poor laborer, who has to support a family, can not well afford to be treated in such a conservative manner for a very long time, with the prospect of an uncertain result, and if the case is made plain to him he will no doubt prefer some operation which promises a fair result and within a reasonable time.

(*To be concluded.*)

A MIXED FORM OF ATROPHIC AND HYPERTROPHIC CATARRHAL INFLAMMATION (HITHERTO UNDESCRIBED), AND ITS TREATMENT.

Read before the American Rhinological Association, at St. Louis, Mo., October, 1886,

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I desire to present briefly a general outline of a class of cases laboring under a mixed form of atrophic and hypertrophic catarrhal inflammation of the upper air passages. In these cases there exists simultaneously and conjointly, hypertrophy and atrophy of the mucus membrane of the nose, nose and pharynx, or nose, pharynx and larynx. I have observed numerous cases of this form of inflammation, some of which were apparently so slightly affected, so far as structural changes and other evidences of inflammatory action were concerned, that some observers would, on examination, conclude that the affected structures were in a healthy condition. The condition of the diseased mucous membrane, however, varies,—the structural changes being greater in some than in others, and the quantity and quality of secretion also varies. Now and then we see hypertrophy and atrophy apparently well marked co-existing in the same patient, but in many of these cases I have not noticed a decidedly pronounced morbid condition accompanied with the usual characteristic appearances present in either hypertrophic or atrophic inflammation occurring separately. In other words, this mixed form of trouble does not present the usual characteristics of either the hypertrophic or atrophic variety of catarrhal inflammation. The accompanying conditions seem to stop short of a well-developed hypertrophic or atrophic condition as described by various authors.

The mucous membrane does not appear dry and incrustated with inspissated secretions, as in the atrophic variety, yet there is not usually present sufficient secretion to normally lubricate the affected surfaces, and a dry sensation is complained of. Now and then I have noticed in children laboring under this mixed form of trouble, and in whom the hypertrophic condition predominated, excess of nasal secretion, but at the same time a dry sensation of the nose, or nose and throat was often present. In these cases I have found astringents objectionable, as they increase the uncomfortable dry sensation referred to. This effect of an application containing an astringent leads me to suspect co-existing atrophy. The mucous membrane in adult patients presents the appearance of atrophy, especially in the pharynx, seeming to be paler, smoother, and apparently thinner than the normal and healthy structure, except here and there, an occasional inflamed circumscribed spot of thickened structure with enlarged blood-vessels.

radiating therefrom, and sometimes involvement of follicles, as we see in so called follicular pharyngitis. In some patients I have noticed no appearance of disease in the pharyngeal mucous membrane, except the incipient appearance of atrophy, at the same time have observed, in the nasal mucous membrane, hypertrophy with a tendency to dryness of naso-pharynx and larynx.

A prominent, and I might say almost pathognomonic, symptom of the mixed form of trouble, is a tendency to a dry sensation of nasal or pharyngeal, and frequently laryngeal, mucous membrane. We must not be misled by the accompanying hypertrophy appearance here and there, and resort to the usual treatment for hypertrophic inflammation. In the mixed form of trouble I have usually found especially the atrophic element predominating in adults, and in children generally the hypertrophic element greatest; yet in both adults and children, treatment adapted to atrophic inflammation is, I am sure, the correct treatment for the mixed form of catarrhal inflammation.

In the management of this trouble I would not expect to succeed with astringents, but would look for an aggravation of symptoms, more especially if they were applied to the nasal mucous membrane. I am sure this class of cases is frequently improperly treated, or disposed of with little or no treatment at all, from the fact that they are many times considered so slight or trivial in character as really to require little or no treatment. Patients suffering from this variety of diseased mucous membrane are unwilling to be put aside in this way, therefore seek further advise. The lessened secretion of the naso-pharyngeal mucous membrane tends to the development of similar laryngeal involvement. Really the mucous membrane in this variety of disease does not appear literally dry, but there is, as a rule, unquestionably diminished secretion, which is generally purulent in character.

There is not sufficient secretion, as a rule, to thoroughly lubricate the mucous membrane, but enough secretion is present to prevent that excessively dry, glazed appearance which we see in a more advanced case of uncomplicated atrophic catarrhal inflammation. In cases of laryngeal involvement, patients are inclined to clear their throats, and sometimes swallow the wrong way. A hot, dry air or an atmosphere containing smoke, dust or other foreign matter seems to aggravate the trouble, especially carpet dust, which is linty, and being so, adheres more obstinately to the mucous membrane. Overheat from any source sems to aggravate this trouble, but furnace heat or dry stove heat is especially injurious, as it tends to further increase the dryness of the affected structure.

So far I believe only five distinct and separate varieties of catarrhal inflammation have been mentioned. I refer to Dr. Bosworth's classification, which is more complete than that of other authors, and indeed a good classification; but so far no author has included in his classification the mixed form of catarrhal inflammation of which I speak. This form of disease occurs quite frequently; indeed, so much so that I felt it necessary to call attention to its unquestionable existence and its successful management. Dr. Seiler, in speaking of simple chronic catarrh, says:[1] "This affection is conveniently divided into two large subdivisions, viz., into hypertrophic and atrophic nasal catarrh, which may arise independently of each other, or the atrophic may be a sequel and consequence of the hypertrophic variety. As the treatment, however, is very different, these two varieties must be considered under separate heads." This being the case, if it be true that there exists a mixed form of atrophic and hypertrophic catarrhal inflammation, how are we to meet and successfully combat these opposite coexisting conditions?

Proper classification of the different varieties of catarrhal inflammation is important, from the fact that we cannot treat them all alike. It is therefore absolutely necessary to recognize the true condition of the affected structures. A hypertrophic condition of the mucous membrane of the upper air passages accompanying atrophic inflammation of the same structure, will not yield to treatment usually resorted to in cases of uncomplicated hypertrophic catarrhal inflammation. Herein lies the difficulty of treating successfully a large class of cases, which I consider mixed in character.

Seiler[2] says, moreover: "That the hypertrophic condition may exist in one nostril and the atrophic condition in the other;" and moreover, "As the treatment, however, is very different, these two varieties must be considered under separate heads." Under this state of case, how would Dr. Seiler treat his patient who had a hypertrophic condition in one nostril and an atrophic condition in the other? According to the position taken by him, he would treat one nostril for hypertrophic and the other for atrophic catarrhal inflammation. Now if we accept the idea of a mixed variety of atrophic and hypertrophic catarrhal inflammation, and the fact that treatment adapted to the atrophic condition is correct in the management of said mixed form of trouble, I think we will succeed better than to treat one nostril for hypertrophic inflammation and the other for atrophic inflammation. Dr. Seiler also says that "Hypertrophic and atrophic catarrhal inflammation may arise independently from each other, or the atrophic may be a sequel and consequence of the hypertrophic variety." While this is generally conceded, it is not a well proven fact. It is difficult to reconcile the view that inflammation of the mucous membrane in one case will result in hypertrophy and in another in atrophy, because of the presence of organized connective tissue, when we realize the fact that this connective tissue is present in both the hypertrophic and atrophic varieties of catarrhal inflammation. Why in one case should the inflammatory process interfere with the glandular and follicular structures, and the general nutrition of the parts, as to produce atrophy and in another case give rise to increased nutrition, increased growth and increased action of the follicular and glandular structures and hypertrophy? If these conditions arise separately and independently from each other, the

[1] Seiler, "Diseases of Throat," p. 218.
[2] "Diseases of the Throat."

atrophic condition is not always Nature's cure for the hypertrophic condition. In other words, atrophic inflammation, according to this view, is not always preceded by a hypertrophic inflammation. The etiology of these two conditions seems irreconcilable. Dr. Bosworth, under the head of "Chronic Nasal Catarrh," in speaking of atrophic or dry catarrh, says:[3] "After removing from the mucous membrane of the lower pharynx, the plug of dry, shreddy mucus protruding in the median line, when the disease has resulted from the hypertrophic form of catarrh, we will find in this locality hypertrophied glandular tissues, which characterizes that form of the disease." This is an admission of the fact that we may have a mixed form of trouble, even in an advanced and fully developed case of so called atrophic inflammation.

The class of cases referred to in this paper, however, stop short of a fully developed atrophic or hypertrophic condition, with its usual accompanying symptoms when considered separately. A hypertrophic catarrhal inflammation must be treated differently from an atrophic catarrhal inflammation, after full development, and as described by *various authors*. The point I wish to make is, that we frequently meet with a mixed form of atrophic and hypertrophic catarrhal inflammation, and notwithstanding the accompanying hypertrophy, which usually predominates in children, we must, in order to afford relief, adopt treatment suitable to the existing atrophic condition, regardless of the accompanying hypertrophy. But the treatment must be less stimulating than in a case of purely advanced atrophic catarrh attended with dry inspissated, incrusted secretions, the removal of which sometimes requires the use of alkaline detergents. As a rule, in the mixed form of trouble under consideration, the usual detergents are not required. The treatment should be mild, soothing, gently stimulating, antiseptic, and protective, so far as local applications are concerned. It must be unirritating. I have obtained the most satisfactory results from applications of vaseline, containing a small quantity of oil of eucalyptus, two to five drops of the latter to an ounce of the former, which should be made hot before the oil of eucalyptus is added, after which the mixture should be stirred until it becomes cool, when it is ready for use. Some bear more of the eucalyptus than others, from the fact that the treatment should be more stimulating in some patients than in others. I usually apply, by means of spray tubes, about one-half drachm of aforesaid mixture with each tube used. Tubes necessary for nose and throat are numbered four, five, one and two, and when the larynx is involved a number seven, with which we can thoroughly spray the larynx if the patient is asked to breathe naturally or inhale deeply. In frequency of applications, and amount of medicament used, I am governed by the condition of the affected structures and the effect produced. As the affected parts improve, less treatment will be required. The mixed variety will not bear as much continuous treatment, as a rule, as the hypertrophic or the atrophic variety occurring separately. One of our best guides in the management of the mixed form of trouble is returning moisture of the mucous membrane or lessened dry sensation so often present. After having given sufficient treatment to relieve the accompanying dry sensation, the secretions being increased, and the diseased condition and appearance of the inflamed structures improved, I have usually found it best to discontinue treatment as long as the patient did well without it, recognizing the fact that the parts must be kept in a favorable condition to grow well by degrees. When improvement ceases after discontinuance of treatment, and there is a return of symptoms of the existing trouble, sufficient treatment is needed to again put the parts in a condition to improve without treatment for a time, after which a little treatment may be necessary now and then to assist the *vis medicatrix naturæ* on to final recovery. It is impossible to reëstablish a normal condition of the affected structures in a short time, hence the necessity of following up the treatment from time to time, *pro re nata*, until the parts grow well. This line of treatment, in connection with constitutional remedies, such as tonics, laxatives, and diuretics, will not only remove the accompanying hypertrophy, but will produce increased nutrition in the atrophied structures, and increased action of the glands and follicles of the diseased mucous membrane. During and after treatment hygienic measures should be observed.

While the authorities generally take the position that the atrophic condition is a consequence and result of the hypertrophic condition, and that either condition may exist separately from the other, I am inclined to the opinion that as a rule hypertrophy exists prior to atrophy, and that after atrophic changes begin in a hypertrophied structure, treatment usually resorted to in cases of hypertrophic inflammation is not suitable for the relief of the mixed form of atrophic and hypertrophic catarrhal inflammation. In other words, after atrophic changes begin in a hypertrophied structure, remedies such as I have mentioned, directed to the relief of the atrophic condition, will not aggravate the accompanying hypertrophy, but will relieve both the hypertrophy and atrophy. In the mixed form of trouble, irritating astringents, etc., usually resorted to in hypertrophic catarrh, will invariably aggravate the accompanying atrophic condition. Our treatment, therefore, must be directed to the relief of the atrophic condition always, when atrophy exists, regardless of any hypertrophy which may exist. When spraying the lower pharynx and larynx, I usually add to the mixture of vaseline and oil of eucalyptus, a few drops of the comp. pinus canadensis mixture mentioned in Dr. Rumbold's "Hygiene and treatment of Catarrh." It generally adds much to the comfort of the patient, but whenever it gives rise to the slightest dry sensation it should not be used.

[3] "Diseases of Throat and Nose" by F. H. Bosworth, p. 214.

MEDICAL PROGRESS.

THE TREATMENT OF PUERPERAL RUPTURE OF THE UTERUS.—F. KRONER, of Breslau, in a short but lucid communication in the *Centralblatt für Gynäcologie*, in addition to reporting a case of his own observed in 1880, has collected all cases of puerperal rupture of the uterus, in which labor was completed *per vias naturales*, *treated without drainage*, reported during the last ten years, for the purpose of studying the relative advantage of drainage or no drainage. The outcome of this investigation serves as additional proof that drainage of the peritoneum presents no advantages, a view that is at the present day being admitted as correct from a theoretical as well as from a practical standpoint.

His own case is the following: Woman, æt. 31, III-para, rachitic, child in vertex presentation; one hour after breaking of the membranes rupture of the womb, with escape of the head. Turning and extraction promptly attended to, with delivery of a dead, fully matured girl baby. The womb is torn across at its anterior attachment to the vagina. The peritoneum not torn, but peeled off from the womb for a considerable distance to the front and to the right. Manual extraction of the placenta, which had slipped between the uterus and the anterior wall of the abdomen. Irrigation of the womb with carbolized water. Treatment during the first days consisted of opium and an ice bladder to the abdomen, afterwards in emollient applications and an occasional laxative. After suffering with a diffuse parametritis for five weeks, patient is discharged cured seven weeks post-partum. Subinvolution had been normal; the womb was displaced to the right on both sides of the uterus; tense cords could be felt; Douglas' cul de sac was worn shallow and non-resistant. The forty-seven cases of ruptured uterus treated without drainage, collected from medical literature, comprise nineteen complicated with lesion of the peritoneum, with eight recoveries; ten cases uncomplicated, with five recoveries, and eighteen in which no reference is made to the condition of the peritoneum, with nine recoveries; a total of twenty-five fatal cases and twenty two recoveries.

No light is shed upon the question of drainage or no drainage by a large majority of the fatal cases, for seven perished during or shortly after labor, eleven within the first twenty-four hours, and only eight after twenty-four hours, either on the following days or weeks. Of these latter three were affected with some disease intra-partum, and four cases were in part tedious labors, in which the abnormal conditions were recognized late, and labor was terminated, after many futile efforts, in a severe and violent manner.

Of far greater importance for the solution of the question of drainage were the twenty-two cases of recovery. They were far from being all simple cases, but rupture had in all cases but one taken place *spontaneously;* and in no instance was grave infection present inter-partum. As far as the reports go to show, the lying-in differed but little from the cases successfully treated with drainage, the shortest without drainage lasting eighteen days, against fourteen days with drainage, and the longest seven weeks without drainage against nine weeks with drainage.

This proves that we are not at all justified in attributing the favorable results in the cases treated with drainage to drainage itself. *Natural* drainage, as has been emphasized by Kaltenbach, accomplishes the most good, and unquestionably the discharge of matters that have been poured into the abdominal cavity is greatly facilitated by *intra-abdominal pressure*. Hence our main object must be to favor natural drainage by a *firm and well-fitting abdominal bandage*, and by a *semi-recumbent position* of the patient. Artificial drainage, without the strictest antiseptic precautions, may be attended with more harm than good. Prognosis will be greatly bettered by a most thorough cleansing of the peritoneal or extra-peritoneal cavity.—*Memorabilien*, Hft. 4, 1886.

OPIUM IN FEVERS.—SURGEON-GENERAL GUNNELL has a note on this subject in the last Naval Report. While in charge of the temporary naval hospital at Washington, during the war, a great number of cases of fever (intermittent, remittent and continued) were received from the Potomac flotilla, which consisted of some thirty or forty small vessels engaged in the blockade of the Virginia shore. Except on the flag-ship there were no medical officers on those vessels, but most of them were supplied with a surgeon's steward or apothecary having some small knowledge of medicine. When received at the hospital the history of these cases generally was that the men had been sick for several days and had been treated with quinine, and perhaps a mercurial purgative. I adopted a uniform plan with them. The patient on admission was given a warm bath and placed in a comfortable bed with cotton sheets and gown. Most of them came from hammocks on ship board, with the stains on their bodies of the blue flannel shirts which they had worn night and day. Some soup or milk food was given to them, and effort was made to determine the time of recurrence of the chill or fever. An hour before this time a hypodermic injection of morphia, $\frac{1}{16}$ grain, was administered under the skin of shoulder or buttock. The result was invariably the same. When the time of the expected paroxysm arrived the patient was in a profound sleep, covered with perspiration; from this he awoke refreshed and ready for food, and convalescent. Not a grain of quinine was given any of those patients after reaching the hospital—generally no medicine of any kind—and the men were returned to duty after a few days in a condition of health. In some cases, where the exposure had been longer or when the remittent tended to pass into continued form, the convalescence was more slow, but the result was the same.

Subsequent experience has convinced me that any paroxysm of ague can be aborted and the attack broken up by the practice here given. I am sure that too much quinine is used in the treatment of malarial cases. Twenty or thirty grains of quinine sulph. in 5 grain doses in capsules between the paroxysms, with aperient containing 1 to 2 grains of

calomel is a sufficient preparation for the *coup de grace* of the morphia injection. After breaking the attack in the manner suggested salicin is often employed to prolong the effect of quinine, with good results. Five-grain doses in capsules, with a little pepper, black or red, or with 1 grain of quinine is very efficient.

After the beginning of the ague, when the patient is shivering in the chill stage, it can often be aborted by the inhalation of a few drops of nitrite of amyl, which will shoot the attack through chill and fever into the sweating stage in half a minute. This, of course, must be managed only by a physician, who should know with whom he has to deal before employing so powerful a remedy. I do not see why a congestive chill could not be controlled by the same agent, while the mustard frictions and hot whiskey and water in the rectum are used. But of this I have no personal experience.

[A hypodermatic injection of morphine will also abort a chill, even after the cold stage has set in.]

Treatment of Nocturnal Eneuresis. — Dr. Alexander Harkin, in a paper on this subject, says:

A mode of treatment of eneuresis founded on the theory of a hyperæmic condition of the cord as its cause, would naturally proceed on the lines of lowering the chronic congestion of the organ, and thus it is that remedies such as belladonna and bromide of potass., sometimes relieve by their power of diminishing reflex action, and causing anæmia of the cerebral organs, but their good effects are transient and not always perceptible. I have long since discarded them as insufficient, and have adopted the use of derivatives and revulsives, such as dry and wet cupping, or blisters to the nape of the neck, applied as high as possible, and as close as circumstances will permit to the neighborhood of the foramen magnum occipitale and the region of the medulla oblongata.

In my experience I have had but seldom to apply to the cupping; one full vesication being generally sufficient; a blister three inches in length by two in breadth, either by emplastrum lyttæ, or by my favorite remedy, the linimentum cantharidis of the Pharmacopœia, applied vertically, suffices. It is very seldom that a second application is required; occasionally, especially in females, after some months of respite, there may be a call for the renewal of the remedy; in obstinate cases and in grown up patients, dry or wet cupping may be requisite to complete the cure. It is of importance to note that while this infirmity is of much less frequent occcurrence in the female, it is also sometimes more difficult of cure; this may be accounted for by the anatomical peculiarities of stricture in the female organs, the urethra is only one and a half inches in length, and is much wider than in the male; it is besides unprovided with a sphincter muscle so distinctive of the other sex. It is also generally well known that females, even in waking moments, have not always complete control over the bladder, and that the slight impulse communicated by a fit of sneezing, laughing or coughing, may at any time in some individuals cause a complete evacuation of its contents. My plan of treatment has been thoroughly tested, however, in a female orphanage, and St. Patrick's Industrial School, at present containing more than 150 female children, averaging from 6 to 18 years, and the manager informs me that there has not been a single case for more than a year in the school, and that those treated by blistering had all recovered, only two having required a second application. In private practice, too, it has been fairly successful in female children. — *Provincial Medical Journal*, January, 1887.

Simple Test for Wall-Paper.—A simple and easily-applied test for wall-papers has been devised by Mr. F. F. Grenstted. No apparatus is needed beyond an ordinary gas-jet, which is turned down to quite a pin-point, until the flame is wholly blue; when this has been done, a strip of the paper suspected to contain arsenic is cut one-sixteenth of an inch wide, and an inch or two long Directly the edge of this paper is brought into contact with the outer edge of the gas-flame a grey coloration, due to arsenic, will be seen in the flame (test No. 1). The paper is burned a little, and the fumes that are given off will be found to have a strong, garlic like odor, due to the vapor of arsenic acid (test No 2). Take the paper away from the flame, and look at the charred end—the carbon will be colored a bronzered, this is a copper reduced by the carbon (test No. 3); being now away from the flame in a fine state of division, the copper is slightly oxydized by the air, and on placing the charred end a second time, not too far into the flame, the flame will now be colored green by copper (test No. 4). By this simple means it is possible to form an opinion, without apparatus and without leaving the room, as to whether any wall-paper contains arsenic, for copper arseniate is commonly used in preparing wall papers. Tests 1 and 2 would be yielded by any paper containing arsenic in considerable quantities.—*British Medical Journal*, Dec. 11, 1886.

Entozoa and Pernicious Anæmia. — Dr. G. Reyher, writing on the etiology of pernicious anæmia, points out that, as in a large number of these cases a Bothriocephalus latus has been diagnosed and expelled by means of male fern, the patients subsequently recovering, and as the anæmia of miners is now known to be due to the Anchylostomum duodenale, it is possible that all cases are due to entozoa of one kind or another, and that therefore diligent search should always be made in the faeces for the ova of tæniæ, etc. The treatment will in cases of successful search be obvious.—*Lancet*, Jan. 29, 1887.

Treatment of Diabetic Thirst.—Duchenne recommends the following mixture for the excessive thirst of diabetic patients:

Phosphate of potassium	2 parts
Water	75 "

One teaspoonful should be given two or three times a day in a little wine or hop tea.—*Nouveaux Remèdes*, October 1, 1886.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

The Editor of this Journal would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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THE RED CORPUSCLE AFTER TRANSFUSION.

From a clinical standpoint the question of the normal life-duration of red blood-corpuscles is chiefly of interest on account of its bearing upon transfusion of blood. As is well-known, the lamented Panum made the first direct attempt to ascertain the life-duration of transplanted corpuscles, but by a method which was both crude and laborious—though he found that the red corpuscles were capable of living at least five days after transfusion, and that their life-duration was probably longer Twelve years after Panum's experiments Worm-Müller found by experiment that the longest possible life-duration of corpuscles after transfusion in dogs was about two or three weeks. Quincke's observations agree with this result; and experiments made by Dr. William Hunter, of the University of Edinburgh, and published as a "Report to the Scientific Grants Committee of the British Medical Association," still further confirm the accuracy of the statement. From his observations on dogs and rabbits he draws the following conclusions: 1. The duration of life of red corpuscles after transfusion varies considerably in different animals, and in the same animal at different times; 2. That the life-duration depends on two main factors, namely, the quantity of blood transfused, and the activity of the organs concerned in blood destruction; 3. That the process of blood-destruction is probably, under normal circumstances, more rapid in the dog than in a rabbit, and that this is certainly the case after transfusion of blood; 4. That the share taken by the liver in this process of destruction is always considerable, but is always greater in dogs than in rabbits; 5. Since after transfusion of blood in conditions of health, the rate of destruction of the transfused corpuscles averages from 2 to 3 per cent. *pro die* in the rabbit, and is considerably more rapid in the case of the dog, to conceive of a condition, therefore, in which after transfusion of a small quantity of blood, for example, 3 or 4 per cent., the corpuscles may remain discoverable for a period of some days, is to conceive of a condition, which, in all probability, never obtains; and, while this is true of the rabbit, it will hold still more true of the dog (and, by analogy, also of men), in which animal the process of blood-destruction is normally more rapid.

We are not so much interested, however, in the manner of conducting the experiments, as in the conclusions which may be drawn from them as to the effect of transfusion upon man; and Dr. Hunter's paper is chiefly valuable to the clinician on account of what he says on this point. We cannot, on man, transfuse such large quantities of blood as to ascertain, by actual enumeration, the life-duration of the transfused corpuscles. Again, transfusion is practised upon man only in conditions of anæmia, and here the functions of the blood-forming or blood-destroying organs are altered or impaired. "We may assume that in man, as in the dog, the corpuscles after transfusion, will be disposed of with a rapidity directly proportional to the quantity of blood injected, and varying with the activity of the organs concerned in blood-destruction, especially the liver.' If, for example, "in a person weighing 112 lbs., the quantity of whose blood would be 138 oz., we transfused 6 oz. of blood (or 4.3 per cent.), the excess of corpuscles would under normal circumstances be got rid of in all probability in a period of from one to two days." But as we have seen, it is in conditions of anæmia that transfusion is performed; and for the purposes of this discussion we may disregard traumatic anæmia. We may regard simple anæmia and chlorosis as due to a deficient blood-formation: on the other hand, anæmia may be due to increased blood-destruction; due either to greater activity of the blood destroying organs, or to lessened vitality of the corpuscles, or to both. "So far as my observations at present go, I am inclined to think that the greater number of cases of anæmia, if not, indeed all, may be referred to one or the other of the first two conditions; either to diminish production of blood corpuscles, or increased destruction." It will be understood that we are now taking no account of the blood-plasma.

As to the effects *per se* of a diminution of the number of the corpuscles, experiments on animals

show that the greater proportion of the corpuscles, may be withdrawn without serious result to the animal. We may withdraw one-half or two-thirds of the blood of a dog or rabbit, and replace it with a ¾ per cent. solution of common salt without affecting the general health of the animal. And as a matter of fact, animals fatten under repeated bleedings. Now, chlorosis "is essentially the result of a faulty formation of red corpuscles, probably in the main induced by a faulty assimilation of iron and consequent deficient formation of hæmoglobin. In such cases, in spite of the fact that the number of corpuscles may be reduced by one-half, one-third, or even more, and the hæmoglobin percentage even more reduced, the condition of the patient is far from being a serious one. But the case is quite different in other cases of anæmia, such as those to which the terms 'progressive' and 'pernicious' have been applied. When we contrast the appearance of a chlorotic patient with that of one suffering from pernicious anæmia, associated as this is with a general wasting of the body, it is impossible for us to resist the conclusion that in the two cases we have to deal with two entirely different affections, both characterized, it is true, by a great deficiency in corpuscles, but with entirely opposite tendencies. The latter condition must be regarded as essentially the result of an increased destruction of red corpuscles, mainly on the part of the liver; the condition being entirely uninfluenced by the administration of iron." These extremes of anæmia must be carefully distinguished, and it must be remembered at the same time that between the two there are many varieties of intermediate forms. But the important point to remember in all of them is "that the condition of the blood, as regards the number of corpuscles, does not in itself constitute the disease, but must be regarded mainly, if not entirely, merely as the result of disease —of morbid action in some organ or other of the body." Under such circumstances transfusion can act only by modifying the nutrition of the body, and this it can do in one or other of these ways (taking into consideration only the red corpuscles): 1. Either by the blood-corpuscles continuing to live for a certain time within the circulation, and continuing to perform during that period all the functions of those normally present; 2. By the introduction of a certain amount of oxygen along with the corpuscles at the time of transfusion, and the increased supply of oxygen brought to the tissues while the corpuscles remain in the blood; 3. By the introduction of the hæmoglobin contained in the corpuscles.

We are thus enabled to form a tolerably definite estimate of the life duration of the red corpuscles after transfusion. In the dog the rate of destruction of corpuscles in excess is 5 or 6 per cent. daily, or even more. But in man we can rarely transfuse a quantity of blood equivalent to more than 5 or 6 per cent., which is probably entirely insufficient to materially influence the general mass of the blood, for its destruction may be expected within a day or two at most under ordinary circumstances. Now, in cases of pernicious anæmia we transfuse corpuscles into an organism whose own corpuscles are perishing with undue rapidity; and "it may be fairly regarded as doubtful whether the introduction of corpuscles under such circumstances can be of the slightest value at all;" that is, if the value of the operation is to depend on the continuance of corpuscle-life for some time. "It may, however, be urged that, in other conditions of anæmia, namely, those depending on diminished production, the same argument cannot apply against the efficacy of transfusion, since under such circumstances the process of blood destruction is probably also diminished. This is probably the case, but in such conditions there is little or no occasion for resorting to such an extreme measure." But this diminution of corpuscles does not *per se* constitute an immediate danger; we know that there are cases of anæmia in which the corpuscles are reduced to 700,000 or 800,000 per cm., without the life of the patient being endangered; and we can restore the blood to its normal condition without transfusion. The amount of oxygen conveyed to the tissues by the new corpuscles may be considerable at first; but as this supply depends on the life-duration of the new corpuscles, it is doubtful whether the operation is justifiable on this ground. Most probably, thinks Dr. Hunter, the beneficial results of transfusion are due to the introduction of a certain quantity of hæmoglobin into the system, which may serve as a stimulus to the blood forming glands, and thus stimulate them to an increased production of red blood-corpuscles. This view is based on the destruction of blood in the liver, the spleen, and the bone-marrow, and the effect of an accumulation of blood-pigment in the organs on the nutrition of the animal. An accumulation of pigment in the spleen is both compatible with health and conducive to its maintenance; but the accumulation of pigment in the liver is always greatest when the animal's health has suffered most—and this is readily understood when we remember the double function of the spleen —blood-forming and blood-destroying—and that pigment accumulated in the liver is effete matter, indicating that a large amount of iron has been withdrawn

from the system. But as in all cases, says Dr. Hunter, "only a certain proportion of the blood corpuscles so introduced is destroyed by the double-function organs, the remainder being disposed of by the liver, "and those proportions are determined by the relative activities of the two sets of organs, it follows that, in most cases of anæmia, only a small proportion of the hæmoglobin so introduced can be utilized for purposes of blood-formation; and this proportion becomes infinitesimal, and the value of transfusion correspondingly lessened, in those cases of anæmia —for example, pernicious anæmia—which in all probability depend on an excessive blood-destruction on the part of the liver, a destruction evidenced, amongst other things, by the extraordinary amount of blood-pigment found within the liver-cells in that disease."

Dr. Hunter's very interesting paper, containing an account of his experiments, may be found in the *British Medical Journal*, of January 29, 1887.

RESECTION AND EXCISION.

Surgical writers, especially those using the English language, seem to have fallen into hopeless confusion, and a great deal of error, in regard to the meaning and use of the words resection and excision. This is most prominently seen in three very recent works on operative surgery, in which we read the following: "The terms excision, exsection, and resection may be applied without distinction to operations having for their object the removal of the articular extremities of bones, or of bones in part or whole" (Mears); "Excision of bone is a conservative operation, directed to the extraction of such portions of it as are inconsistent with the future usefulness or the symmetry of the part, together with the removal of the condition directly demanding the operation" (Bryant). By the latter excision is employed to the exclusion of resection, which is not used in connection with operations on bones. In a third, and still more recent work, some attempt is made to distinguish the words: "The terms resection and excision are frequently used as synonymous, but though the definitions of the two words are not unlike, there is a different and distinct meaning attached to each when properly employed. Resection strictly implies the removal of the shaft of a long bone, while excision means the removal of the joint ends of the bones, or the extirpation of a short, flat, or irregular bone" (Stephen Smith). To show how consistent the last writer is in applying the terms we may cite a few examples: "Resection of lower end of radius; excision of the extremities of ulna and radius; resection of upper end of humerus; the humerus is generally resected in part, though it has been removed entire; the scapula is resected for shot injuries, necrosis, and morbid growths . . . resection for necrosis should involve the entire bone; the spine, acromion process, and angles may be separately resected; resection of cuneiform bones; osteoplastic excision of the *foot* (possibly a new operation); the vertebræ have been subjected to frequent partial resections; portions of ribs may require resection; resection operations on the bones of the face; excision of half of lower jaw; resection of upper jaw." These are a few of the many examples which might be cited. It will be seen that the definitions practically exclude the removal of a portion of the shaft of a long bone, or of the articular extremity with a portion of the shaft, or of half of a short, flat, or irregular bone.

If we did not know where to go for information on this subject we might very properly ask for the authority upon which the words have been thus defined. In the 1874 edition of Dunglison's "Medical Dictionary" resection is defined as "Act of cutting or paring off. A name given, especially by the French surgeons, to operations in which the carious extremities of long bones, or the unconsolidated extremities of fractured bones forming irregular joints, are removed with the saw." This definition would be more nearly correct if the words "carious" and "with the saw" were omitted. Webster's definition (last edition) of resection is: "The removal of the articular extremity of a bone, or of the ends of the bones in a false articulation." This is not entirely inclusive, but shows that resection does not mean the removal of the shaft of a long bone. Excision means *destruction, extirpation*. But perhaps it may be well to go back a few years and see what has been the usage of the words: In Littré's translation of Hippocrates the words *résection* and *réséquer* are used in the sense of removing a *portion* of bone. Benivieni, in writing (1529) of an operation, uses the words *magna ossis parte resecata*. Park, who first resected the knee in 1781, speaks of his operation as total extirpation of the *joint* or *section of the extremities* of the bones forming the articulation. Thirteen months later Moreau operated on the tibio-tarsal articulation, and his son describes the operation as a *résection*, using the word in the titles of two papers (1803 and 1816). Syme wrote a "Treatise on the Excision of Diseased Joints," and this is one of the earliest authorities (if it be one) for such use of the word, except its use by James Jeffray, who also quotes Park as using it (1806). In 1812 the Faculté de Méde-

cine of Paris gave the following as the subject for a thesis: *De la Résection et du retranchement des Portions d'os*, etc. The title of Champion's *Thèse*, written in 1815, was *Traité des Résections dans la continuité des os cariés*. Since that time we find that French and German writers uniformly use the word as we claim it should be used. Fancy a German using such a term as *Gelenkexcision!*

In the Catalogue of the Library of the Surgeon-General's Office we find resections tabulated under "Excisions." But on examining the list it will be found that in about 80 per cent. of the titles resection is the word used; that the word excision occurs most frequently in English titles, though resection is used in some of these; and that German, French, Italian, Spanish, Danish, Dutch, Norwegian and Russian writers use resection almost invariably in speaking of the operations on joints. We find German writers using *Aussägung* as synonymous with resection. Wagner uses the words "*Resection und Extirpation*" in a title, showing that he distinguishes them. Finally, Ollier, of Lyons, who has made the most careful study of the subject, and everything connected with operations on bones, of any writer, says, in his *Traité des Résections:* We will only apply the name resection to the operation which consists in dividing a living bone and cutting off a considerable portion of it, preserving the soft and hard portions situated below it. By considerable portion, we mean so much as by its absence changes the external shape and relations of the bone. He does not use the word excision, because he says that some authors have used it synonymously with resection; instead of it he uses total ablation or extirpation; and he divides resections into two categories: 1. *Resections of continuity*, or *osseous resections;* and 2. *Resections of contiguity*, or *articular resections*. The term *total resection* he uses for an operation which removes "all the osseous extremities which constitute an articulation." It certainly does not seem reasonable to speak of total removal of the radius as a resection, and term total removal of a rib an excision; and at the same time use excision for the removal of the articular extremity of the radius. It is a confusion of terms, and warranted neither by good usage nor etymology. As applied to soft parts excision is always used in the sense of extirpation, destruction, total removal; and resection in the sense of partial removal. We excise the tongue, spleen, kidney, larynx, tumors; we resect the intestine, tendons, pancreas, lung, etc. There seems to be no reason for completely changing the meaning of a word according to the structure or location of a part operated upon.

NEURASTHENIA AND NEURATROPHIA.

In the *Philadelphia Medical Times*, of January 22, 1887, is a leading article in which it is said that the term "neurasthenia" was coined by Dr. Geo. M. Beard, from a term "nervous asthenia" used by Dr. Fordyce Barker, and that Dr. Beard wrote the first accurate description of the condition. Other writers have made the same or a similar error. Dr. Beard did not invent the term, nor was he the first American writer on the subject. His first contribution appeared in the *Boston Medical and Surgical Journal*, on April 29, 1869. Dr. E. H. Van Deusen, of Kalamazoo, Mich., wrote the first systematic paper on the subject in 1867, and was the first to call attention to the theory of its being associated with an underlying neuropathic diathesis (*Michigan Asylum Reports*, 1867); a theory which the *Medical Times* credits to Arndt (*Die Neurasthenie;* Wien: 1886), but which has been a profound conviction with advanced neurologists since the appearance of Van Deusen's paper. Nor did he coin the word: it may be found in Dunglison's "Medical Dictionary," Edition of 1856. In a late article Playfair objects to the term, but finds nothing better; though *neuratrophia* expresses the underlying organic condition of all forms of neurasthenia. It expresses a state of nerve starvation due to causes inherent in the nervous system itself, having its appropriate symptomatic expression in nervous exhaustion, and its immediate consequences (*Alienist and Neurologist*, July, 1882). In the *Alienist and Neurologist*, of October, 1880, may be found a paper by Dr. C. H. Hughes, of St. Louis, giving full credit to Van Deusen for his work in this field.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, January 12, 1887.

The President, Jos. Taber Johnson, M.D., in the Chair.

H. M. Cutts, M.D., Secretary.

Dr. J. Taber Johnson read a paper entitled

CAN THE CÆSAREAN SECTION BE SAFELY SUBSTITUTED FOR CRANIOTOMY IN THE UNITED STATES AT THE PRESENT TIME?

(See Journal, Feb. 12.)

Dr. T. E. MacArdle said that no one listened to Dr. Johnson's paper with greater interest than himself. If two years of careful study had accomplished so much for him, he felt quite sure that he will stand

by his side before very long. I expect to hear him declaim with me against "the deliberate and cold-blooded murder of an unoffending child," and I expect to hear him teach that the child should be given a chance for its life even at some risk to the mother. I congratulate him on his near conversion. If Dr. Meadows did not convince others that craniotomy should be forever abolished from the list of justifiable operations, at any rate he seems to have enlarged the views of many who listened to him, and of many who read his burning words. All that is asked of Dr. Johnson is to teach his students what he says is the outcome of the discussion in England, viz., that whenever Cæsarean section offers the best chance it should be urged upon the family. For he contends that it always offers the best chance of saving life.

Dr. Johnson does not wish to be bound by cast-iron rules of any kind, whether medical, ethical, or theological. "Thou shalt not bear false witness" and "thou shalt not commit adultery" are about as cast iron as "thou shalt not kill;" and yet I cannot imagine my friend committing perjury or stealing his neighbor's wife, though he might, indeed, under certain circumstances, kill his neighbor's child, for fear some one would say he was bound by a cast iron rule, formulated by himself or for him by others. If, forsooth, the woman has been in labor for twenty-four hours, and he cannot successfully deliver by forceps, must he destroy the fœtus because he has been engaged to see this woman safely through her labor, and neither she nor her husband are willing to subtract anything from the mother's chances for the sake of a living child? Does not the accoucheur owe some duty to the child? Perhaps the woman, when she discovered herself pregnant, not knowing the deformed condition of her pelvis, consulted her physician to rid her of the burden she did not wish to bear. But the good physician who is bound by the cast iron rule not to commit abortion under such circumstances, because it is murder, will not hesitate to perform craniotomy, and his feelings are dreadfully hurt if you call it murder.

Dr. Johnson thinks he makes a strong point when he quotes Barnes as disapproving of the action of those who wait until the child is dead before performing craniotomy. I hold such men culpable, and contend that they should make an effort to save two lives. I contend that when the child is alive, we hold its proxy, and must cast its vote in favor of Cæsarean section or one of its alternatives. I would modify Lusk a little and say "the duty of a physician is to his *patients*," and he has no right to neglect or kill either of them. Even the pagan Cicero, quoted by Parvin, deems it right to save the life which shall be of greatest service to the State. But Parvin has not proven to my satisfaction that a woman who cannot become a mother is of greater importance to the State than a child whose possibilities are unlimited. I will be greatly indebted to Dr. J. for a list of the cases in which our hands will be tied by an adherence to an inflexible rule never to commit murder.

If it be difficult, in the practice of medicine or surgery, to make correct comparisons, let us afford statisticians no chance of making them, but let us adopt the rule to know our art so thoroughly that we will recognize early enough the conditions calling for Cæsarean section or some of its alternatives. Let it be no longer said that "in Germany physicians can control the circumstances of their operations and their patients better than we do in this country; that they have better and more opportunities to perform timely Cæsarean sections than we do in the United States;" excepting, of course, the greater number of cases which are liable to occur on account of the greater prevalence of deformed pelvis. Though, fortunately, our opportunities of studying deformities of this character are comparatively limited, yet I contend that a more accurate study of pelvimetry, by means of normal pelves, will remove such blots from our escutcheon, as the recent case in Philadelphia. An early diagnosis and the consent of the patient and her friends to an early Cæsarean section, is more than half the battle, says Dr. Johnson. Very well, make your early diagnosis, and teach your students to make an early diagnosis, and teach your students that they must do away with the fear that the result will be fatal, and let them, by their words and actions, so inspire their patients that, being imbued with confidence, there shall be no delay, no golden moments frittered away. The fault lies with obstetricians, and more especially with teachers of obstetrics and writers of obstetrical text-books. They have not been properly instructed themselves, and they fail to properly instruct others, but they go along blindly, handing down the teachings of their predecessors without learning the right and then standing up for it manfully.

Professor Leopold, of Dresden, has operated nine times, saving eight women and all the children. The two maternity hospitals of Dresden and Leipzig together have had sixteen operations with fifteen maternal recoveries and the survival of all the children. Let us emulate this most successful and glorious record. Is it not good sound Yankee doctrine to let no one excel us in anything good? Have the Europeans greater skill, more brain force than we? If so, we can not begin too soon our endeavors to equal them. Do we hesitate to perform laparotomies because we cannot hope for the success of Tait? And shall we lay so much stress on antisepsis when Bantock, Keith and Tait pretend not to use them? Let physicians and patients be taught to believe that Cæsarean section is the best operation to perform, that it shall be done early, and that it does not mean sure death; let these principles be inculcated, and we open the door to a more successful future. I agree with Tyler Smith, that "Craniotomy was a rude attempt, devised in the infamy of the obstetric art, to rescue the mother at the expense of the child, in cases of otherwise insuperable difficulty."

Every great discovery in this branch of medicine stands in direct opposition to craniotomy, and has invariably tended to diminish the frequency of its performance where the child is living. Thus, as regards craniotomy, a process of diminution has been going on for ages. It remains to be seen whether the time has not arrived when a stand should be

made for its entire abolition, as a rule of practice, in cases in which the child is alive and viable.

Pelvic deformities, besides being the most frequent cause of craniotomy, have always been considered as the most justifiable excuse for its performance. But if we give due importance to measures of prevention, it cannot be denied that all such cases may be met without the necessity of craniotomizing the living child at or near the full term. But I believe that such deplorable contingencies need never occur, and that cases of this kind, when they do happen, ought to be considered as depending on some error or neglect, and to be held only as exceptions to right practice. Nothing will tend so much to diminish or prevent such cases as the establishment of the non necessity of craniotomy as the rule of practice. Considering the various means at our disposal in the way of preventing the necessity for craniotomy, I do not hesitate to express my strong conviction that, as the rule, craniotomy in the case of the living and viable child should be abolished, and that if all the resources of obstetrics in the way of prevention, management, and alternative treatment, were properly wielded, the necessity for the operation would never occur. There is no department of medicine in which, looking to what has already been done, there is more reason to be proud and hopeful for the future, than obstetrics. If facts and arguments are of any value, the diminution or abolition of craniotomy must greatly diminish the loss of maternal as well as of fœtal life. Rightly considered, the interests of the mother and child rarely, if ever, come into collision. Neither fœticide nor matricide need ever be entertained by the accoucheur.

Dr. Thomas C. Smith did not see why craniotomy should be stigmatized as murderous, and he has yet to see an advocate of Cæsarean section who was consistent in his arguments. The men that have been termed "ignorant" in this discussion are the very men who have been most successful with Cæsarean section. The country practitioner, who has to rely on his own resources, is the man who can do successfully these operations, as well as his highly educated city brother.

What are we to do in a transverse presentation with an arm presenting and a firmly contracted uterus? Is that child to be delivered by Cæsarean section? or are we to wait for the death of the fœtus and a rupture of the uterus? How is it in twins with locked heads? Are we to deliver by Cæsarean section? The man who "sacrifices" one child there is not usually called a murderer.

Dr. McArdle says, get around the necessity of craniotomy by studying pelvimetry. *When* are we to find out the diameters of the pelvis? In the virgin? Of course not.

The gentlemen advocating Cæsarean section must have things as they want them. The women must be brought for operation at the beginning of labor. Suppose such a case is attended by a midwife who, after ineffectual attempts to deliver, sends for a doctor who discovers the state of things. He sends for the surgeon, who says, "I can not save her, but if I had been called earlier I might have." We must take things as they come, we cannot have them always as we want them. What has antisepsis to do with the case? Formerly, Cæsarean section saved a good many lives in this country, but since the introduction of antisepsis we find 86 per cent. mortality among mothers. I feel alarmed for those who place so much faith in antisepsis. One cannot say much for the encouragement of Cæsarean section from its results in this city. Few women or their husbands will give consent to Cæsarean section.

Dr. S. C. Busey corrected Dr. Smith in regard to third case of Cæsarean section mentioned by him. It was in no sense a Cæsarean section. The laparotomy was done to relieve strangulation from displaced fibroid tumor. The woman had been five or six days suffering from this. The tumor had been removed, when the membranes broke and the child was delivered *per vias naturales*. The uterus contracted, but again dilated, and there was alarming hæmorrhage. The operator then removed the uterus, controlled the hæmorrhage, and subsequently amputated the uterus.

Dr. Busey asked Dr. Smith if, taking into consideration the contracted pelvis in his case of impacted head, would he do embryotomy?

Dr. Smith replied that he would; and asked Dr. Busey what he would do if the head could not be released?

Dr. Busey said that when the child's head was impacted for twenty-four hours the child would be dead, and Cæsarean section and craniotomy were not comparable under such circumstances. In a reply to the question what he would do if the child were living at the end of twenty four hours, Dr. Busey said that he would lift the head out, after having chloroformed the woman.

Stated Meeting, February 19, 1887.

The President in the Chair.

The discussion on Dr. Joseph Taber Johnson's paper was continued.

The President remarked that as several gentlemen were present to-night who were not present at the last meeting, he would say for their benefit, that in his paper Cæsarean section was made the operation of election, but at the same time craniotomy was not to be abolished. The discussion was to be upon this ground.

Dr. S. C. Busey said that at the last meeting he had no intention whatever of censuring the gentlemen named in his remarks, but, on the contrary, he desired to commend them upon their change of opinion. He desired also to congratulate himself, that so many of the profession had so nearly adopted the views expressed by him two years ago. The discussion is upon "Craniotomy vs. Cæsarean Section," and the precise issue is, not that craniotomy has been, or will ever be, abolished, but that it "should" be; and this upon purely scientific and moral grounds. He would make a few quotations from Dr. R. Barnes' paper upon the "Alternatives to Craniotomy." Dr. Barnes has hitherto been the highest authority of the craniotomists, but he seems now to have modified

his views somewhat. Barnes says: "The question we are met to discuss—'What are the Alternatives to Craniotomy?'—may be accepted as the great test of the progress of obstetrics. Or the following proposition may be stated: the more nearly we approach to the abolition of craniotomy, the more nearly do we attain perfection in obstetric practice. Tyler Smith brought the question before the Obstetrical Society in 1859 in these terms: 'On the abolition of craniotomy from obstetric practice in all cases when the child is living and viable.' To attain this consummation in the goal to which humanity points. And science in this respect, as in many others, is untiringly striding towards the fulfilment of the dictates of humanity. That science will ever achieve all that humanity longs for may be doubted; but the pursuit is a noble one, and cannot fail to bear good fruit."

Farther on he says: "Now, whether by design or otherwise, we have arrived at this point—there is a viable child; it cannot be brought living through the pelvis; a momentous question confronts us. Shall we deliberately sacrifice it, by perforation or equivalent operations, so as to save the mother from the perils attendant upon attempts to deliver *per vias naturales*, or by Cæsarean section at a time selected when the child is viable? In such a case, the Cæsarean section takes rank as an elective operation, as a real alternative of craniotomy. If the opportunity of election between the induction of labor to be completed by craniotomy, or to be evaded by Cæsarean section, has gone by, and we are brought face to face with labor at term, the pelvis deformed beyond the reasonable probability of extracting the fœtus by embryotomy with safety to the mother, the Cæsarean section has become an operation of necessity. It is not an alternative, it is the only operation." (*Brit. Med. Journal*, Oct. 2, 1886.)

I have been constantly surprised at the sensitiveness of the craniotomists whenever the term "killing" is applied to the operation of craniotomy. Something in the word, or in the suggestion of the fact that something is killed, seems to give them umbrage. A more moderate word might be found, but the act should be described as it is, "killing at will." If the operation is not done in the truest belief and the firmest conviction of its right, in the mind of the operator, then surely there can be no excuse for it. The act of destroying must be not only the result of deliberation, but of conviction, else it is criminal. Dr. Johnson's paper is not so much an argument in favor of craniotomy as an argument in defense of those who may not be competent to perform Cæsarean section, or to determine the proper relation of either to the case. Also against what he styles a cast-iron rule, *i. e.*, not to kill one that the chances of the other may be improved, but to pursue that course which gives a chance to both and saves most lives. Surely it cannot be an argument in favor of craniotomy, that it cannot be performed by unskilled surgeons. This cannot be the scientific way of regarding the question. Which is most obnoxious, to resolve to kill, or to resolve not to kill? Which is most likely to promote the killing, a rule that you may commit the act, or a rule that you will not commit the act? Is killing such a trivial act that a physician can at will determine its justice and propriety, and excuse himself upon the hypothesis that it was his right, his privilege? Our own experience, and the experience of the past, has taught that if we recognize it as a legitimate operation it will often be done, and its alternatives will be less often resorted to. The increased knowledge of the application of the forceps has already diminished the number of craniotomies, and when we have taught its various alternatives a little more thoroughly, there will be fewer in the future.

The introduction of the induction of premature labor, by Barnes, has already saved many from craniotomy, even by the advocates of the operation. The argument that we cannot recognize the deformity until term, is not against Cæsarean section or for craniotomy. Let the absolute necessity of recognizing the incapacity of the mother before term, be taught, and we shall have more induced labor and fewer craniotomies. Craniotomy is a comparatively rare operation. Tyler Smith estimated that it was done only about once in 500 labors, and now it must be even rarer. It is admitted that, with a conjugate diameter of, or below, two inches, craniotomy is more fatal than Cæsarean section. Now, if the relative merits of the two methods are to be compared, they ought to be measured by their respective results in like conditions of pelvic obstruction below the maximum conjugate, at which either is admissible, and not by excluding from the mortality of craniotomy its disastrous results to mothers in the higher grades of diminution of the conjugate and the total loss of children at all grades.

Moreover, when we consider the cases, above the minimum, at which craniotomy is permissible, which can be delivered by forceps or version, it leaves a narrow limit for craniotomy and that is covered by induced labor. Dr. Kinkead, of Dublin, at the meeting of the British Medical Association, contrasted the two operations as follows:

Causes of Operation.	Percentage of mat. mortality
Contracted pelvis, 2.5 inches and under	37.5
Pelvic tumors. Stadfelt	40.
Ovarian tumors. Playfair	46.6
Ovarian tumors, no other treatment. Playfair	60.
Carcinoma of uterus. Hermann	75.

Compare this maternal mortality with the same in Cæsarean section, and there is not only no very great disparity, but a very considerable difference in favor of the latter, when we add the children saved. The results of Cæsarean section have been:

Number.	Percentage of mat. mortality
5605, quoted by Barnes	46.
130, quoted by Harris	56.
32, quoted by Kinkead	62.5

I may put in here, as contributory evidence, the conclusions of Dr. Barnes at the end of his paper before quoted. Barnes concludes:

"1. The legitimate aspiration and tendency of sci-

ence is to eliminate craniotomy on the living and viable child from obstetric practice.

"2. The advance of hygienic rule, the improvements in forceps, in turning, in obstetrics generally, have materially curtailed the field within which craniotomy can be justifiable.

"3. In the most extreme degrees of pelvic deformity, where delivery *per vias naturales* can only be effected with doubtful success to the mother, Porro's operation is the legitimate alternative for craniotomy, it being understood that the opportunity of inducing abortion has gone by.

"4. In less advanced degrees of pelvic contraction, but still incompatible with the delivery of a living child '*per vias naturales*,' the opportunity of inducing abortion having gone by, but in which craniotomy would effect delivery with strong presumption of safety to the mother, the Cæsarean section may be a proper alternative for craniotomy. This is the most debatable point.

"5. In the minor degrees of contraction, say from three inches to three and a half or three and three-quarters inches, the opportunity of producing labor having gone by, the far greater safety to the mother obtained by craniotomy, and the prospect of living children in future pregnancies by induced labor, make craniotomy the proper course to adopt.

"6. In other emergencies than deformity, as in obstructed labor from ovarian tumors, the alternative to craniotomy is to remove the tumor.

"7. In cases of immovable tumors, Porro's operation is the proper alternative.

"8. In rupture of the uterus, the being delivered or not, Porro's operation is the alternative. There the interests of mother and child coincide.

"9. In cases of disease or tumors of the uterus obstructing delivery, Porro's operation is the proper alternative.

"10. In atresia of the cervix or vagina, Cæsarean section or craniotomy may be necessary; but incisions or gradual dilatation will more frequently be the proper alternatives.

"11. When obstruction is due to hydrocephalus or dropsy in the child, embryotomy or tapping is indicated. When the child is dead, embryotomy is indicated, and decollation when the child is impacted, and turning is hazardous.

"12. In convulsions and hæmorrhages, the proper alternatives for craniotomy are found in the more scientific methods of conducting labor under these complications.

"Lastly, but the dream of Tyler Smith, the abolition of craniotomy, will be fully realized only when hygiene shall have triumphed over disease and deformity."

Dr. Johnson would, perhaps, like to know some of the men whose opinions coincide with my own. In the discussion following the paper of Dr. Kinkead, before quoted, Dr. Lusk says he believes "that, under 2.75 inches, namely, below the limit where premature labor and version were available, modern methods of Cæsarean section were preferable to craniotomy. Cæsarean section always held out promise when performed under favorable circumstances." Mr. Lawson Tait, in the same discussion, said that he could add but little from the obstetric side of the question; but from the surgical aspect, he felt certain that the argument that such operations as that of Porro would fall largely, of necessity, into the hands of men inexperienced in abdominal surgery, was not of much value; for exactly the same thing was true of bad cases of craniotomy; and he felt certain, of the two classes, under similar circumstances, the resulting advantages would be largely on the side of amputation of the uterus." Dr. More Madden, for a long time Master of the Rotunda Hospital in Dublin, following Mr. Tait, said: "In a long experience in hospital and private practice, and as an obstetric teacher, he had not himself been able to recognize the necessity of craniotomy, and he had never resorted to it or countenanced it. . . . In cases of difficult or complex labor, in which craniotomy, which he regarded as a murderous and horrible operation, had been recommended, he had been fortunate to save life by one—or attempt the various improved methods of artificial delivery now available—namely, either by the induction of premature labor; by the modifications of Porro's operation; or by Cæsarean section; or by the timely and judicious employment of the long forceps, or version—whichever method might be adopted, it should, he said, be borne in mind that the primary object of the obstetric art was to deliver living children from living mothers, with safety to both."

Finally, Mr. Hough said, "after a large practice of over forty years at midwifery, he had only met one case in which it was necessary to perform craniotomy, and that was about forty-two years ago."

If we are to consider the question from a scientific standpoint, we must take into consideration the total number of lives saved. The lives of the mothers alone do not give a fair basis for comparison of the two operations. He has prepared a table contrasting 38 cases of Sänger's operation, given by Harris, and an equal number of supposed cases of craniotomy, thus:

Operation.	Cases.	Women saved.	Per cent. women saved.	Children saved.	Per cent. children saved.	No. lives at risk.	Lives saved.
Sänger	38	26	68.42	33	86.84	76	58
Craniotomy	38	38	100.00	None.	None.	76	38

Seventy-six lives are involved in both cases. But at the outset, only 38 lives can be saved by craniotomy, and this per cent. has never been attained. Barnes says that the percentage of deaths has been reduced to 5 per cent. in craniotomy. This cannot be maintained, for while one man may have a series of cases without a single death, another, in the same city, will have a succession of fatal ones which will increase the mortality. Nor is it fair to say that the success of the Sänger operation is due to the locality in which it is done, or to the dexterity of the operators. Undoubtedly dexterity is of value, but just as necessary as it, is the conviction of right, and the

courage of one's convictions. These, together, are what create success.

Perhaps it does require the best educated men to determine when, and where, and how to perform the operation, but experience has shown that these are the very men to get along without it, and that in their hands the operation is seldom, if ever, done.

When the profession in this country is educated up to the same high standard, but few will perform the "sacrificial" operation. In my opinion, the question may be safely left to the advance of science, and I believe that in ten years few men will do it or justify it. The craniotomists claim the right of election, when two lives are at stake, and also which of the two lives is the most valuable. But when, and how, and by whom, is this question to be decided? Certainly not by the executioner. The many alternatives which afford reasonable chances of saving both are a positive denial of such a right. Barnes says upon this subject: "Therefore, if it be still contended that the Cæsarean section should in all cases be preferred to embryotomy, it must be qualified upon other grounds. Two points must be granted, or either of them: 1. Must we abandon the old moral law, which declares that it is the mother's right to save her own life, even at the sacrifice of her child's? Are we prepared for this? It is not simply a question for medicine to decide. Religion and civil law claim a voice—a preponderating voice." Here is a positive declaration that "religion and civil law have a voice—a 'preponderating' voice" in the matter. Those who claim the right to kill, claim it upon the ground that it is done indirectly. The presumption is that the act is deliberate, and hence must be direct. No conscientious man can excuse himself upon any such hypothesis.

The child is entitled to life at the increased risk of the mother. Humanity demands it, and science clearly points to it as the line of duty. The right to destroy the fœtus is also defended upon the theory that it is the aggressor—an equally fallacious argument. Consciences that can be quieted upon such a basis must indeed be flexible. It is also defended upon the basis of individuality. It is admitted that a larger number of lives are saved by the Cæsarean section. Nevertheless, it is claimed that there are instances which absolve the operator from wrong. It is true physicians are not always permitted to do that which is proper and right, but the denial of this right or principle cannot carry with it the privilege to commit a wrong, nor can it absolve the operator from the deliberate commission of a wrong. Sentimentality, family ties, and other circumstances, may embarrass individual instances, but such considerations cannot affect the question in its scientific aspects. Many persons believe the production of abortion before the period of quickening is justifiable, but no physician will admit such a doctrine. After all, except that Dr. Johnson maintains that craniotomy is occasionally a proper procedure, our views upon the subject do not greatly differ.

Dr. Johnson has quoted from the recent work of Dr. Parvin, in which he says: "The principle of morals upon which most obstetricians rest the right to sacrifice the child for the sake of the mother is a very old one, and has met with general acceptance; that principle clearly enunciated by Cicero, for example, and sustained by moralists of all ages, is, that if two lives are in such peril that both cannot be saved, but one will be, by the sacrifice of the other, let that life which is of the least value to the State or to society perish." No such condition as Cicero defines has or ever can exist in cases where Cæsarean section and craniotomy are alternatives. No one ever has or can assert that either life will be saved by the sacrifice of the other. No one ever has or can guarantee the life of the mother after craniotomy. Moreover, who is to determine the value of the lives? The operator? the man who may be impelled to the execution because of ignorance of the other procedures, or too timid to undertake another. Who can estimate the value of the life of an unborn child to society or to the State, and who is to determine the relative valuation of such a life and that of a woman who cannot give birth to a child *per vias naturales?* The executioner? If the life of the mother could certainly and only be saved by the killing of her fœtus, and the death of both was otherwise inevitable, the execution of the child might be justifiable as the only alternative,—but such is not, and never can be, the case.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, February 9, 1887.

The President, J. Solis Cohen, M.D., in the Chair.

Dr. George W. Vogler reported a case of

SUPPURATIVE INFLAMMATION OF THE LIVER IN A CHILD TWELVE YEARS OF AGE; OPERATION AND RECOVERY.

M. C. S., female, æt. 12 years, of rather delicate and frail build, presented the following history:

On October 7, she first complained of intermittent pain immediately over the right hypochondriac region, corresponding to the right lobe of the liver, and at the same time began to favor the part by slightly bending forward and to the right side when standing or walking. She was still attending school, and kept up active exercise. There were apparently no other symptoms present—at least she complained of none. This state of things continued for about one week, the little patient continuing her school duties, although with much suffering and inconvenience. She now refrained from going down to recess with the other children. The pain became more severe, especially at night, producing great restlessness, and interfering with sleep. The stooped condition of the body was now permanent; walking was discontinued owing to pain; and some fever (at night particularly) also manifested itself, with marked impairment of appetite, coated tongue, thirst, cloudy urine, and constipation. Both the mother and child after several careful examinations of the part, found nothing to account for the trouble. In the mean-

while, a physician in attendance upon another member of the family was asked to look at the child. He examined her several times, but found nothing of note, and pronounced the case as probably a strain, or one of cold, for which he ordered a plaster, and some citrate of magnésia for febrile disturbance. The child continued to grow worse daily, and the same physician ordered a fly-blister to the affected part. It may be mentioned just here, that the pain, never shifted, but was always confined immediately over the area corresponding to the right lobe of the liver. Flax-seed and onion poultices were ordered to be applied by the medical gentleman upon noticing later a slight swelling over the seat of pain. Upon November 12, five weeks after the commencement of her illness, I assumed charge of the case. I found her bedfast, greatly reduced in flesh, with an anxious expression and suffering intensely. Her favorite position was a sort of sitting posture, with the body bent forward and to the right, and with the lower limbs flexed strongly upon the abdomen. The symptoms already described were very marked; also irregular attacks of chilliness or rigors; temperature was elevated every night; there was no cough, jaundice, or vomiting; there was, however, sallowness of the skin, and dark, turbid and scanty urine.

Examination revealed a dark bluish swelling, some three inches in diameter in the right hypochondriac region, bordered by the sixth rib above; the tenth below; the linea mammalis (a line extending perpendicularly downward from the right nipple), upon the inside; and the linea axillaris, on the outside. The swelling was about three-quarters to one inch in height, and presented all the appearances to sight and touch of a carbuncular development. It was hard, firm, and quite painful to the touch. There was no fluctuation. My first object was to ease the child of her enforced or assumed cramped and painful position in bed by encouraging her to occupy a rocker, or, if possible, to step about the room a little. She was put upon concentrated nourishment, stimulants, and medicinally, on syr. ferri iodidii, and bromides and chloral for the pain. The latter remedies had to be early replaced by opiates and quinine, owing to their inefficiency to combat suffering. Temporarily, I ordered an ointment applied every eight hours, composed of camphor, opium, ext. belladonna, comp. resin ointment, and cosmoline.

This plan of treatment was continued for five or six days, with the effect of markedly softening the swelling and causing it gradually to diminish in size, and the development of a central point of concentration just over the eighth intercostal space. I thought I detected fluctuation on palpation, but obtained nothing but blood on aspiration with the exploring needle. At any rate, the child seemed easier and more comfortable. Anodyne flax-seed poultices were now started, and on the 21st instant I prepared to operate, all the conditions seemingly pointing to the detention of deep seated pus. Contrary to the usual custom, I determined to treat the case by free incision, the thorough evacuation of the pus (if any), and the prevention of reaccumulation by complete drainage by means of rubber tubing.

The patient was thoroughly etherized, and after selecting a favorable point by the aid of the exploring needle, a free opening was made, one inch or more in length, down through the eighth intercostal space, about one and a half inches to the right of the linea mammalis. Immediately a large quantity of pus flowed from the wound. The amount of pus I judged to have been at least eight fluid ounces. At first the pus was "laudable," free from odor, but streaked or marked with biliary coloring matter; toward the end it assumed the very dark condition usally spoken of as "chocolate-colored pus," due to the presence of blood or disintegrated hepatic tissue. Gradual pressure over the hepatic area aided in its rapid and free evacuation, the bulging over the intercostal spaces disappeared, and for the first time the outlines of the ribs were readily reorganized. A probe was now passed through the wound under the ninth rib, and it entered in an obliquely downward direction, to the extent of four inches, toward the linea alba, and three inches obliquely upward toward the sternum, in depth perpendicularly about two and a half inches. A perforated rubber drainage tube doubled upon itself, and was introduced into the depth of the cavity, enabling free drainage; and the daily injection of carbolized oil (two to sixteen fluid ounces) through one end, and its escape through the other. Warm cataplasms were continued night and day. After some five days the tube was replaced by one of a smaller calibre, and entirely done away with the ninth day after operation. A small piece of lint dipped in carbolized oil was used a few days longer, simply to keep the cut from closing and insure through healing from within outward. Finally, carbolized zinc ointment completely healed the wound by December 8. Her improvement and rapid convalescence after the operation were wonderful. Internally she has been taking cod-liver oil emulsion with hypophosphites and syrup ferri iodidii.

December 12, she was walking and playing about her room. Of course, the marked constitutional depression due to her serious ailment, will to a considerable extent, continue for some time to come, but there is at present no doubt of her entire recovery of good health.

January 15, 1887, the child is well.

The first noteworthy fact is the *age* of the patient, viz., 12 years. Statistics show this affection to be rare in children, being seldom seen under the age of 20.

In seeking for the *cause* of the disease in this case, I am led to adopt one of a traumatic nature. Frerichs, Budd, Andral, Romis, Morehead, and others, in their collection of cases, show but a very small percentage due to external violence. Thus, Budd reports only two out of his sixty-two cases collected; Morehead, but four out of his extensive observations—318 in all. The patient revealed no previous malarial, dysenteric or metastatic history, or any other inflammatory and ulcerative process in the gastro-intestinal canal, which are generally looked upon as the chief disturbing influences or causes of suppurative inflammation of the liver. Careful inquiry elicited the following history and probable

cause: About four days previous to the commencement of her symptoms, she assisted her aunt in carrying flower plants from the yard up to the fourth floor of the house. One of these plants was, owing to its weight, entirely beyond her strength, yet, after four efforts, she succeeded in landing it on the fourth floor. She described very vividly the pain felt by the pressure, and the weight sustained over the right hypochondriac region in her struggles to complete her task. As before said, the child is of a very spare build and delicate physically, and it is quite probable that this external violence originated her painful affection.

A few words as to the diagnosis, prognosis, and treatment. I found much difficulty for a time in arriving at a satisfactory conclusion as to the *diagnosis* of the disease, and was inclined for some days to believe the case one of an unusual carbuncular development, dependent upon a very badly run-down system, and having its starting-point in the mechanical violence or external contusion referred to above. Even the exploring needle failed me in establishing a positive conclusion. It was only quite definitely arrived at in doing as Frerichs so aptly puts it: "In most cases a correct diagnosis will only be arrived at, by not relying upon individual symptoms, by taking a general view of the mode of origin and entire clinical history of the case, and, after excluding by comparison the diseases of the liver and of the neighboring parts, which may give rise to symptoms similar to those of hepatitis."

It is well understood that the prognosis is generally unfavorable in suppurative hepatitis. Frerichs says: "Suppurative hepatitis belongs to the class of severe maladies which imperil life, and which terminate in death far more frequently than in recovery." And this naturally leads to the consideration of the treatment. I candidly believe from the presence of the grave symptoms, that my patient would have died in a short time but for the prompt and energetic operation undertaken as soon as a reasonable conclusion could be arrived at concerning the diagnosis. Even when there is considerable doubt existing and the condition of the patient is serious, careful exploratory incision could be made to determine the true nature of affairs. No danger can result from this when proper precautions are used. At any rate, the aspirator should be early used as a means of establishing diagnosis. Drs. Sims, Hammond and Jimney, of Mexico, and many others, have frequently punctured the liver without any bad results.[1] It has been demonstrated time and time again, that the entrance of air into such a cavity through an incision is not necessarily attended by decomposing action and death, but, on the contrary, a complete evacuation is obtained, reaccumulation prevented, and the threatened death by exhaustion or blood-poisoning averted. Upon the other hand, imperfect removal of the pus by one or more aspirations or punctures, permitting more or less to remain behind, will, in addition to that constantly forming, undoubtedly keep up the constitutional disturbances, and, finally, produce a fatal issue by rupture or blood-poisoning, if the very rare act of absorption does not take place.

The case happily illustrates the good results of free incision, perfect drainage, and the rapid healing and antiseptic properties of carbolized oil. The method of gradually opening the abscess as recommended by Récamier, Begin, and others, by the separation of a slouch through many applications of caustic potash or soda, is very slow in operation, painful, productive of loss of tissue, and if an opening into the pus cavity is finally established air must also surely enter. Again, many abscesses of the liver open spontaneously, and though air freely enters the cavity, the patients usually go on to rapid recovery. In fact, this latter mode of termination of the disease (spontaneous opening), is very much welcomed by the physician, and has eminent advocates. I should not think after the excellent result obtained, of treating similar cases by any other plan than the one suggested. Lives are undoubtedly lost by the partial or imperfect method of the removal of foreign material, by repeated aspirations or punctures, thereby necessarily keeping up the source of trouble which must eventually end in death. The early and prompt operation happily terminated my case in recovery in about fifty days, while Rotis, in his valuable and extensive statistics, shows the average duration of the disease in cases *not* operated upon, and which recovered by bursting either through the thoracic or abdominal walls, through the bronchi, colon, or stomach, to have been 140 days.

Dr. C. N. Seltzer said: I have seen three cases of abscess of the liver, and in these cases the symptomatology was somewhat different from that of the case described. I should think that an abscess of the liver holding 8 ounces would produce more constitutional disturbance than was present in this case. The destruction of liver structure is usually greater, and the case, as a rule, requires a longer time for recovery. The three cases which I have seen all resulted fatally, and at the post mortem the liver tissue was found to be very ragged, and hanging in shreds in the abscess cavity In these cases the diagnosis was readily reached by a microscopical examination of the pus. The liver cells could be easily detected. That, I think, should have been the mode of determining whether the case was really one of hepatic abscess or not.

Dr. Joseph S. Neff said: It is well-known that pus from a hepatic abscess rarely contains liver débris, because most abscesses in this situation are surrounded by dense walls of pyogenic membrane. The cases to which Dr. Seltzer has referred, in which the liver substance projects in shreds into the abscess cavity, are cases of diffused abscess, which are very rare.

In the circumscribed abscesses of the liver which I have seen, the tendency to point has been in a different direction from that in the case reported. I have seen only one case in which the abscess was opened through the abdominal walls. That was the case of a man in the Jefferson College Hospital.

[1] Since completing these remarks, I notice in the January 1st number of the Medical News, a report of a "Case of sudden death from the introduction of an aspirator needle," by Dr. Reeve, of Dayton, Ohio.

The abscess was tapped a number of times, but as the man was evidently sinking, it was decided to open it through the abdominal wall. One of the dangers of this operation is that pus may escape into the abdominal cavity. In performing this operation, some operators at the first sitting cut down to the peritoneum. In the course of twenty-four hours there will have been some local peritonitis with the formation of adhesions, and then the operation is completed. Dr. J. M. Barton operated in my case, and after cutting through the abdominal wall with a scalpel, a white-hot knife was used in order to avoid hæmorrhage from the liver structure. After the liver had been penetrated to a short distance, the knife failed to act satisfactorily, and the operation was completed with a soft gum catheter. In the case reported, the cause of the affection and the youth of the patient are also points of considerable interest.

Dr. Seltzer said that his remarks were based on the statement, that this was an acute diffused hepatic abscess, and not one surrounded by pathogenic membrane.

Dr. Vogler said he had no doubt whatever as to the diagnosis of the case. The situation of the abscess, the fact that the pus was mixed with biliary matters, the fact the finger could be introduced through the cut two inches under the ribs, and the very grave constitutional symptoms, were sufficient to indicate the seat of the disease. I unfortunately neglected to make microscopical examination of the pus. As Dr. Neff has said, it is not necessary that disintegrated hepatic structure shall be found, for many of these abscesses are localized. I thought that in all probability adhesion had formed between the abdominal wall and the liver, and in operating I experienced no trouble.

(*To be concluded.*)

GYNÆCOLOGICAL SOCIETY OF BOSTON.

Stated Meeting, November 9, 1886.

The President, H. O. Marcy, M.D., in the Chair.

H. J. Harriman, M.D., Secretary.

Dr. E. C. Keller presented

CYST OF THE BROAD LIGAMENT

removed from a patient 65 years of age. Seventeen pounds of fluid were evacuated. Recovery was complete in three weeks.

Dr. Keller also presented a

SUBPERITONEAL FIBROID FROM THE FUNDUS UTERI.

Patient was 38 years of age; unmarried; menses regular; uterus free, and sound entered the normal distance. The tumor was diagnosticated as an ovarian cyst with gelatinous contents, but when the abdomen was opened a fibroid was found attached to the fundus. There was one small adhesion to the omentum. The tumor was removed by the thermo-cautery and the stump securely tied. The patient rallied well from the operation and progressed favorably until the sixth day. The temperature then went up; patient vomited and refused food, and death occurred on the seventh day.

The tumor weighed 8¾ lbs. after the blood was removed. It was not as firm as an ordinary fibroid, but to the touch was resilient and comparatively soft. These peculiarities led to a mistake in diagnosis. The autopsy revealed the fact that about five ounces of blood had oozed into the abdominal cavity, and that a localized peritonitis had existed.

Dr. H. O. Marcy presented

A DERMOID CYST WITH BONY WALL.

The interesting feature of the specimen was that a plate of real bone existed in the lower portion of the sac, from which a long spine projected into the cyst. The Fallopian tube was spread out over the tumor in the line of incision, and, being congested, it made it difficult to determine whether the tumor was ovarian and cystic. By the vagina the hard bony mass could be distinctly felt, and this fact led to the opinion that the tumor was fibroid.

In the absence of Dr. Thornton Parker, his paper, entitled

THE REMOVAL OF A LARGE VAGINAL TUMOR,

was read by the Secretary.

This case occurred in the practice of Dr. H. R. Storer, of Newport, R. I. Patient 35 years old; twice married, and has had one child at a normal labor. Health good until four years ago, when she became seriously menorrhagic. When medical aid was sought it was found that the vagina was entirely filled with a mass resembling in shape a pear with its base upwards. As the uterus could not be felt above the pubes in its natural position, it was at first thought that it was one of the rare cases of spontaneous uterine inversion. A catheter could not be made to fully enter the bladder. In the lower abdomen was found an obscure mass lying obliquely from below to the right, which moved with the tumor. With difficulty a sound was introduced into this mass a distance of 2¾ inches, thus settling the diagnosis of a very large fibroid tumor situated in the vagina. An operation was decided on and an écraseur applied, but the chain broke. The operation was abandoned for the time and no unfavorable symptoms followed. Several days later removal was again attempted and was successful. There was virtually no hæmorrhage. After the tumor was severed it could be rotated in the vagina, but could not be removed in the ordinary way on account of its size. Strong, straight hooked forceps in the grasp of a strong man failed to deliver the tumor. It was determined to produce expulsion by pressure superiorly and from within, in imitation of the powers of nature during labor. The sphincter ani having been forcibly dilated, Dr. Storer introduced his forearm into the rectum so far that the fingers entered the sigmoid flexure. The expulsive force thus applied, assisted by the vectis and forceps, was sufficient to deliver the tumor precisely as if it were a fœtal head. The vagina was then plugged. The case recovered without a single unfavorable symptom. The tumor weighed 1½ pounds, and resembled in size and shape an ox's heart. Its longitudinal circumference was fifteen inches, and its lateral circumference at point of attachment was twelve inches. Upon section the tumor was found firm, homogeneous and fibroid.

Dr. W. Symington Brown described a case of his which in some respects resembled the one narrated in the paper. In his case the fibroid was attached to the fundus uteri, and, as it was too large to be removed whole, it was cut up with the écraseur and removed in pieces. Dr. Brown thought that a similar procedure might have been adopted to advantage in this case. Putting the arm into the rectum is a barbarous and unnecessary practice. He regarded it as bad practice to attempt to remove a whole tumor when it could be more easily and safely removed piecemeal. The interests of the patient should be of first importance.

Dr. E. W. Cushing agreed with Dr. Brown. He saw no need of the écraseur in this case, and thought that the mucous membrane might have been cut and the tumor removed in pieces. He regarded the introduction of the arm into the rectum as bad surgery and a somewhat violent mode of procedure.

Dr. E. C. Keller had removed tumors similar to the one described by means of strong vulsellum forceps.

Dr. H. O. Marcy would remove such a tumor by splitting it in pieces and, as it were, shelling it out of its envelope. He mentioned a case which was presented to the Society of a similar tumor which he had removed in fourteen pieces. Dr. Marcy regarded the écraseur as a clumsy and bungling instrument, and thought that other instruments would serve the same purpose with better results. He had introduced the arm into the rectum without doing injury, and held the opinion that it was a justifiable mode of procedure in the diagnosis of some cases of obscure pelvic disease.

Dr. R. J. P. Goodwin mentioned two cases of impaction of fæces caused by eating stick cinnamon which he had successfully treated by dilating the rectum and forcibly removing the impaction.

Dr. E. W. Cushing exhibited to the Society by means of the microscope specimens of the *Gonococcus*.

BOOK REVIEWS.

Nervous Diseases and their Diagnosis: A Treatise upon the Phenomena produced by Diseases of the Nervous System, with Especial Reference to the Recognition of their Causes. By H. C. Wood, M.D., LL.D., Member of the National Academy of Sciences. 8vo, pp. 501. Philadelphia: J. B. Lippincott Co. 1887. Chicago: W. T. Keener.

The first, and only, complaint that we have to make is that it is not stated in the title-page that the distinguished author of this book is the University of Pennsylvania Professor who has given us a work on Materia Medica and Therapeutics, and who has contributed so much to the subject of fever, and to the highest class of medical literature in this country. The author need not have apologized "for trespassing upon the patience of the profession;" he is too well and too favorably known as a writer for anything he should write to be considered as a trespass upon patience.

We find on reading the introduction that this book was written for the general practitioner; and of all American works on nervous diseases which we have yet seen, this is the most intelligible to one who is not a specialist in neurology. It goes over the ground as the physician must go—from symptoms back to lesions, and not from lesions to symptoms, which is the route followed by other authors of such books. Further than this it is scarcely necessary to notice the work, except to say that the only sense in which it can be said to be incomplete is that it does not treat of the therapeutics of the conditions described. Should this be added in subsequent editions the general practitioner will be under still further obligations to Professor Wood.

Clinical Therapeutics. Lectures in Practical Medicine delivered in the Hospital St. Antoine, Paris, France. By Professor Dujardin-Beaumetz, Physician to the Cochin Hospital Member of the Academy of Medicine, etc. The Treatment of Nervous Diseases; of General Diseases; and of Fevers. Translated by E. P. Hurd, M.D. 8vo. Detroit: Geo. S. Davis. 1885.

That a book by the distinguished author of this work is worth reading goes without saying. It is most readable in style and deals with subjects intrinsically interesting. It is not a text-book, but a book rather for the practitioner than the student. It might better have been entitled a treatise on certain topics of clinical medicine than therapeutics. It is true, however, that for the most part it deals with methods of treatment, but does not ignore symptomatology and diagnosis. We recommend it to our readers with pleasure.

Chapters are devoted to the following subjects: Clinical Therapeutics; The Nervous System from a Therapeutic Standpoint; Hydrotherapeutics; Medico-Electricity; Treatment of Neuralgia; of Hysteria; of Epilepsy; of Chorea; of Meningitis; of Apoplexy; of Chronic Myelitis; The Blood from a Therapeutic Standpoint; On Blood-letting; Treatment of Anæmia: of Acute Rheumatism; of Chronic Rheumatism and Gout; of Diabetes; of Syphilis; Fever from a Therapeutic Standpoint; Treatment of Typhoid Fever; of Intermittent Fever; of Eruptive Fevers.

It is unfortunate that a work of so much interest should be marred by a few glaring typographical errors.

INTERNATIONAL CONGRESS.

NINTH INTERNATIONAL MEDICAL CONGRESS.

Washington, September 5, 1887.

SECTION ON MEDICAL CLIMATOLOGY AND DEMOGRAPHY

Scheme of Subjects for Papers and Discussions.

I. Importance of the study of Climatology and

Demography in connection with the Science of Medicine.

II. What constitute determinate climatic characteristics.

III. The effects of climate on the human race as manifested in local demographic conditions; and of the several elements of climate as shown by coincident meteorological, morbility and mortality statistics.

IV. The question of Acclimation.

V. Relative advantages of mountain and seaside resorts for recuperative purposes and as palliative or curative in certain diseased states of the system—segregation *versus* aggregation of invalids at health stations.

VI. The therapeutic value of natural mineral waters.

VII. Accurate records of prevailing sickness in any community a necessary factor in any comprehensive system of *vital statistics*. The responsibility of Governments to amply supply their people with the climatic and vital statistics of their respective countries.

VIII. *Collective Investigation*, apart from aiding the study of the Natural History of Disease, as contributive of numerical data having a demographic bearing, 1, as to the kinds and proportions of prevailing diseases; 2, as to the absolute amount of daily sickness and consequent loss of time, occupation, etc.

IX. *Medical Nomenclature* considered in its practical relations to Vital Statistics.

X. The melioration of demographic conditions effected by *Preventive Medicine*. Influence of the physical well-being of a population upon its economy. Offences against moral and civil law in their medical relations to demographic circumstances.

Those who wish to present papers before the Section must advise the Secretaries before the first of May, 1887, and furnish them with brief abstracts of their papers before the first of June.

Attention is called to the following Rule of the Congress: "*In the meetings of the Sections, no member shall be allowed to speak for more than ten minutes, with the exception of readers of papers and those who introduce subjects for discussion, who may each occupy twenty minutes.*"

Those who intend to be present at the sessions of the Section, and especially those who desire to take part in the discussions, will confer a favor by communicating with the President and Secretaries, who will be further gratified at receiving suggestions as to the work of the Section.

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Charles Denison, M.D.,
245 Fourteenth Street, Denver, Colorado,
Isambard Owen, M.D.,
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Dr. E. Berthierand,
au Secrét. d. l. Soc. Climatol. à Algèrs, Algeria,
Dr. A. Wernich,
Regier u. Mediz-Rath, Cöslin, Germany.
} *Secretaries.*

MISCELLANEOUS.

Detection of Blood-Spots on Iron.—Dr. Dannenberg contributes some valuable data on detection of blood-spots on iron. Blood is easily proven on ordinary surfaces by means of the crystals of haemine, but when blood-spots on rusty iron are to be examined their detection is not so simple a matter, as the iron rust seems to form a combination with it. Dr. Dannenberg, however, states that if a few drops of a 10 per cent. solution of caustic potash be placed on the spot, and thus loosened, the rust scraped off and and treated with ammonium sulphide and water, and then handled according to the usual method, elegant extended rhumbic crystals will be formed. He considers these as conclusive proof and names them "Haemidin" crystals.

Cocaine Legislation.—On February 15, Dr. J. B. Mattison, of Brooklyn, read a paper on "Cocaine Dosage and Cocaine Addiction" before the King's County Medical Society, after which Drs. Wallace, De Lavergne and Mattison were appointed a committee to draft a bill, for presentation to the Legislature, placing cocaine on the list of poisonous drugs, and to be sold only on a physician's prescription.

Disinfecting Stations.—Several disinfecting stations were established in Berlin on November 1, and their use is compulsory by the police regulations. Within six weeks after their establishment 10,593 pieces were disinfected, mostly belonging to persons infected by diphtheria and scarlatina.

Diploma Mill in Maine.—The *Boston Herald* has recently ventilated an extensive diploma industry in Lewiston, Me., a representative of that paper, who says that he is innocent of any knowledge of medicine, having obtained without difficulty a diploma from the Maine Branch of the "Druidic University of America." As this "Branch" is incorporated under the State law, the people of the State must now pay the expenses of "a joint special committee" from the House and a few Senators, "to inquire into the expediency of repealing" the character of the Maine Branch and the Maine Eclectic Medical College.

Dr. T. Gallard, the well known gynecologist of Paris, died on January 31, of diabetes.

M. Raige-Delorme, one of the founders of the *Archives Générales de Medicine*, and one of the editors of the "Dictionnaire Encyclopédique des Sciences Médicales," died recently in Paris.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 19, 1887, TO FEBRUARY 25, 1887

First Lieut. Chas. C. Barrows, Asst. Surgeon, resignation accepted by the President, to take effect Feb. 17, 1887. S. O. 42, A. G. O., Feb. 19, 1887.

First Lieut. Chas. S. Black, Asst. Surgeon, ordered from Ft. Clark, Tex., to Ft. Davis, Tex. S. O. 23, Dept. Texas, Feb. 18, 1887.

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ORIGINAL LECTURES.

THE SYMPTOMS AND DIAGNOSIS OF MULTIPLE NEURITIS; WITH REPORTS OF CASES.

Based on a Clinical Lecture Delivered at the New York Post-Graduate Medical School, January 18, 1887.

BY CHARLES L. DANA, M.D.,

PROFESSOR OF NERVOUS DISEASES N. Y. POST-GRADUATE MEDICAL SCHOOL; VISITING PHYSICIAN TO BELLEVUE HOSPITAL.

A very good description of multiple neuritis was given by Leyden in 1881, again by Piersson in 1883, and by Strümpell in his "Text-book on Medicine." Dr. X. Francotti, in 1886, described it well; so also did Dr. Buzzard in the Harveian Lectures for 1885. Dr. Gowers gives a very complete account of the disease in his recently published text book on nervous diseases. Dr. M. Allen Starr will no doubt cover the whole ground in the most thorough manner in the Middleton Goldsmith Lectures on this subject, now forthcoming.

I venture to give here some notes on the history of this new development in neuro-pathology, since it has made such a change in some of the conceptions of paralytic disorders. Dumenil, in 1864, reported[1] a case running a course of four and one half months, and having the type of the subacute spinal paralysis of Duchenne. The autopsy showed diffuse lesion of the nerves, the brain and cord being normal. A second case,[2] with post-mortem examination, ran a course of several years, and started from a contusion of the sciatic. Eichhorst's case[3] came next. It was like one of acute ascending paralysis, of six weeks' duration, except that there was pain and sensory disturbance. Autopsy showed acute inflammatory nerve trouble, not a simple degeneration. Then Déjerine reported a case also resembling acute ascending paralysis. He found also neuritis, including some changes in the anterior roots. Neither Eichhorst's or Déjerine's cases are very complete. Eisenlohr[4] reported a case of subacute paralysis and autopsy. The cord was normal, the sciatic showed parenchymatous and interstitial neuritis.

Joffroy contributed a very elaborate paper to the *Arch. de Phys. Normale et Path.*, No. 2, 1879. He describes: 1. Spontaneous parenchymatous neuritis. 2. Neuritis from lead poisoning. 3. Neuritis in the course of infectious diseases. Under the first division he describes cases of multiple degenerative neuritis, with autopsy. Lancereaux reports a case of this kind occurring in phthisis, as do Desnot and Pierret.

In 1880 Leyden[5] summed up the work of his predecessors, and reported a case of his own, with autopsy. He gave a systematic clinical history of the disease, and one which is still quite correct. Leyden was followed by Melchert.[6]

In 1882 Scheube, and in the same year Baelz, showed that the nerve symptoms of beri-beri were due to a multiple neuritis.[7] Koeniger,[8] writing on this same subject in 1882 and 1884, alleged that the neuritis was only a complication. Ballet, in 1883,[9] found atrophy of the anterior cornua in beri-beri—nerves not examined. Harada[10] found neuritis and degenerative changes also in anterior nerves in dorsal and lumbar regions. M. P. Mendes[11] found lesions in the nuclei of the columns of Goll, and in the posterior columns, especially, of the cervical and lumbar cord there was atrophy of cells and parasites in vessels; also a neuritis as far up as the spinal ganglia. Tschowski[12] reported several cases, with autopsy in three. He found multiple neuritis, and also atrophic cells in the lumbar cord.

After Leyden's communication there were soon published a large number of cases, by Hiller,[13] Granger Stewart,[14] Eichhorst,[15] Strümpell,[16] Müller,[17] Vierordt.[18] Piersson wrote[19] a systematic monograph on the subject in 1883.

Roth, in 1883, reported[20] a case of acute general paralysis, with autopsy, showing extensive parenchymatous and interstitial neuritis. Dr. S. G. Webber, of Berlin, reported some cases in the *Archives of Medicine*, Vol. xii, p. 33. See also articles by

[1] Gaz. Hebd., 1864, No. 13.
[2] Ibid., 1866, Nos. 4, 5, 6.
[3] Virchow's Archiv, Vol. 69.
[4] Centralb. für Nervenheilk, 1879, and Deut. Arch. für klin. Med., Bd. 25, 1880.
[5] Charité Annalen, 1880, and in Zeit. f. klin. Med., 1880.
[6] Inaug. Dissertation, 1881; Greifswald. Beitrag zur Diagnose der subacute Poliomyelit s u. Multiple neuritis.
[7] Zeits. f. klin. Med., 1882, Bd. iv, p. 616, and Virchow's Archiv, 1884, p. 146, Bd. 95, and p. 531, Bd. 99.
[8] Deuts. Archiv f. klin. Med., Bd. 31, pp. 141, 307; Bd. 32, p. 83; Bd. 34, p. 419.
[9] Proc. de la Société Anatomique.
[10] Neurol. Centralblatt 1885, p. 326, two cases.
[11] Prog. Méd., No. 14, 1885.
[12] Neur. Centralb., 1886, p. 484.
[13] Berlin. klin. Wochenschr., 1881, No. 41.
[14] Edinburgh Med. Journal, 1881.
[15] Archiv. f. Psych. u. Nervenk., Bd xiv, p. 695. [16] Ibid., p. 339.
[17] Ibid., p 668. [18] Ibid., p 678.
[19] Ueber Polyneuritis acuta, Volkmann's Samml. klin. Vort., No. 227, 1883
[20] Correspondenzbl. f. Schweize Aerzte, 1883, No. 13.

Eisenlohr,[21] Strümpell,[22] Moeli,[23] Hirt,[24] Löwenfeld,[25] E. Remak,[26] Grocco,[27] and Oppenheim.[28]

The relation of alcoholic paralysis was studied by Strümpell,[29] by Dr. Dreschfeld,[30] and by Schultz.[31] These writers give a full history of this special subject up to the date of this writing.

The relation of arsenical paralysis to neuritis was studied by the writer, and a full account of it given in *Brain*, January, 1887. In the same article the history of the relation of lead-poisoning and of diphtheria to multiple neuritis is given. In the past year a number of additions to our knowledge have been made, all of which are to be summarized and presented by Dr. Starr in the lectures referred to.

In a thesis entitled "Des Pseudo-tabes," by L. Leval-Picqueche (Paris, 1885), a very complete history of this form of multiple neuritis, from various causes, is given. Dr. Starr has also called my attention to a very complete work entitled "Paralysis Toxiques." by Broussais, of Paris.

The symptoms of multiple neuritis develop in two forms; 1st, those of atrophic motor paralysis with subsidiary sensory changes; 2d, those of ataxia and other sensory disturbances with only moderate motor paralysis. The motor form is the more common. The sensory or ataxic form occurs chiefly as the result of poisons or the infection of diphtheria.

The Atrophic Motor Form.—The symptoms generally come on rather suddenly, and are sometimes accompanied with fever, which may reach 103° to 104° F. The patient suffers from feelings of numbness, prickling or burning in the feet and ends of the fingers. These sensations gradually extend up the extremities, but rarely reach the knee or elbow. They are accompanied by sharp pains and feelings of weakness, and the paralysis steadily increases until the patient is unable to walk or use his hands. The lower extremities are oftenest and most seriously affected, the upper extremities next, and the muscles of the face and trunk least often of all. The flexors of the foot and the extensors of the hands are particularly attacked. The paralyzed muscles speedily become atrophied. The bladder and rectum are not affected. The sexual power is lessened. The pulse is generally quite rapid, owing, perhaps, to involvement of the vagus.

On making a physical examination the skin is generally found hyper-æsthetic, and yet there may be some tactile, thermal and pathic anæsthesia. Later this generally develops. Pressure along the course of the nerves and over the muscles causes much pain, as do muscular movements.

Electrical examination of the muscles shows generally a partial degenerative reaction, the muscles being less irritable than normal to both galvanic and faradic currents. The contractions are sluggish, but it is not common to get polar changes. The nerves show also diminished electrical sensibility, but furnish no positive indications of neuritis as against polio myelitis, though perhaps their irritability is less. There are not usually any marked vaso-motor phenomena except œdema. Sometimes the secretion of sweat is profuse, and in arsenical cases I have seen the feet and hands shed the epidermis as if it had been raised by a blister.

The disease reaches its height in two or three weeks, or even less. The symptoms then gradually ameliorate, and the rule is a progressive improvement ending in cure in four to six months. In some cases the spinal cord apparently becomes involved, and the sphincters are paralyzed; diabetes and various other central symptoms appear.

Some cases of multiple neuritis run a very acute course, and present the symptoms of acute ascending spinal paralysis (Landry's paralysis). Other rare cases present a slowly progressive course lasting three or four years, *e.g.*, Dumenil's case.

These types are different clinically and etiologically from the disease ordinarily known as subacute multiple neuritis.

The Sensory or Ataxic Form is spoken of by Gowers as rare, but I have seen quite a number of illustrations of it. Here the symptoms begin with burning, tingling sensations in the feet and hands, especially the former. The patient notices that his gait is uncertain. The tendon reflexes disappear, the limbs are partially anæsthetic, or areas of anæsthesia are found. There is a moderate degree of motor weakness and atrophy. In a few days the patients may develop nearly all the symptoms of locomotor ataxia. These cases are generally of toxic origin. They run a subacute course, about as does the motor form.

The symptoms may be summarized as follows: Prodromic period in some cases of several weeks characterized by some numbness and lumbar pains. Rather brusque onset, sometimes with pain.

Motor Symptoms: Progressive symmetrical paralysis, ascending, and affecting lower limbs most and oftenest. Paralysis flaccid, atrophic and painful. Partial degeneration reaction. Abolition of knee-jerk as a rule, and of skin reflexes in paralyzed limbs.

Trophic Symptoms: Muscular atrophy; œdema; rarely erythema, eczema, herpes, changes in nails and skin, local asphyxia and gangrene.

Sensory. Parasthesia; especial characteristics are burning sensations, pains of both darting and dull character, worse on movement; tenderness in limbs, and especially over course of nerves. Later some anæsthesia, general or over distribution of nerves.

Cranial Nerves: In rare cases only affected, but optic neuritis is not very rare. Rapid pulse from involvement of the vagus sometimes occurs. Sphincters not involved as a rule.

The termination is usually favorable, but death may come on unexpectedly.

Further details in the history will be brought out in the report of the following cases. These I will give here only in synopsis.

Case 1.—Alcoholic Multiple Neuritis. Sensory

[21] Neur. Centralbl., 1884, Nos. 7, 8.
[22] Ibid., 1884. No. 11.
[23] Charité-Annalen, Vol. ix, 1884.
[24] Neurolog. Centralbl., 1884, No. 21.
[25] Ibid., 1885, No. 7. [26] Ibid, No. 14.
[27] Contrib. alla stud. clin. ed anat.-path. delle Nerv. mult. prim., 1885.
[28] Deutsches Archiv f. klin. Med., 1885, Bd. 36, p. 561.
[29] Krankheiten des Nervensystems, p. 121, and Berlin. klin. Woch., 1885, No. 32.
[30] Brain, 1884, July *et seq.*
[31] Neurolog. Centralbl., Nov., 1885.

Form.—The patient, a bar tender, had always been healthy, and gave no history of syphilis. In the past year he had indulged excessively in sexual intercourse, but still more excessively in alcohol, and after having been on several sprees he was taken to the hospital suffering from delirium tremens. This developed into mania, and he was confined in the asylum for several weeks. During this time he became partially paralyzed, but improved and was discharged. When seen by me soon after, he presented the symptoms of a man in the early stage of locomotor ataxia, except that he had no eye symptoms, girdle pains, bladder or marked sexual trouble. There was marked ataxia, parasthesia, areas of anæsthesia, loss of tendon reflex, some motor weakness. I learned that he later did develop some central symptoms, which lead me to think that the cord became also involved.

Case 2.—Alcoholic Multiple Neuritis. Motor and Atrophic Form.—This patient I saw at Bellevue Hospital, while visiting for Dr. Tuttle, and have shown him several times to my class. The patient was a young man aged 23 years, who for over a year had indulged nightly in sexual intercourse and very excessively in whiskey-drinking. While playing ball one day he noticed a weakness in his legs. This increased in a few days, and he was now obliged to take to his bed. When seen by me he presented the usual symptoms of alcoholic paralysis. His lower limbs were alone affected, while here the flexors of the foot were especially attacked. The feet dropped, and at one time could scarcely be moved at all. There was partial degeneration-reaction. The legs were much atrophied and there was some anæsthesia, but not much pain. There was no ataxia. The knee-jerk was abolished. The sphincters were normal. The patient got worse for several weeks, then began slowly to recover. At the end of six months he could barely walk with help. His mind remained clear.

Case 3.—Multiple Neuritis from Arsenical Poisoning. Sensory or Ataxia Form.—I have shown the class two patients who suffered from multiple neuri tis of this type (published in full in *Brain*, January, 1887). In one the patient, a young man of 25, took a poisonous dose of Paris green. Within a week he had developed very characteristic symptoms of pseudo-tabes, or arsenical ataxia. The symptoms were burning in the feet and hands, extreme ataxia, some tactile anæsthesia of limbs, combined with extreme hyperæsthesia and tenderness, especially over the course of the nerves; peeling of the skin of feet and hands; pains in the legs, especially on movement; optic neuritis; partial degeneration reaction; moderate paresis and atrophy; no girdle pains, no sphincter paralysis, no involvement of face or eye muscles. Mind clear, but patient nervous and hysterical. There was gradual improvement up to a certain point, then the symptoms remained stationary for many months.

Case 4.—In the second case the patient, a man of 45, was taking Fowler's solution in daily doses of ℥iss, and he gradually developed a pseudo tabes similar to that above recorded, but milder in type. His symptoms, too, improved, and he was finally left with simply an annoying numbness of the feet and finger tips. Two other cases have since come under my notice.

Case 5.—Multiple Neuritis from an Infection of Beri beri.—This case occurred in the service of Dr. Roosevelt at Bellevue Hospital, and through his kindness I was able to show it to my class. The case has been reported in full by Dr. Roosevelt, and will soon be published; so I will not give the details here. The patient, a sailor, after suffering several weeks from the anæmia and anasarca characteristic of the "wet form" of beri-beri, gradually developed a paralysis of the lower extremities. The flexors of the foot were most affected. The paralysis gradually involved the muscles of both legs, but to a much less degree those of the thigh. There was some pain and paræsthesia, but little other disturbance of sensibility. The muscles atrophied and showed in one leg partial, in the other complete, typical degeneration reaction. The paralysis progressed very slowly for a few weeks, then slowly improved. Judging from some of the recorded histories, beri beri may also produce a sensory or pseudo-tabetic form of the disease, but it appears to me that the multiple neuritis is not the disease, but is only one of the symptoms, or in some cases one of the sequelæ.

Case 6.—Multiple Neuritis from Rheumatic Cause.—There is no doubt that multiple neuritis may be caused by what is known as rheumatic influences; and the following case seems to illustrate it, although I confess that the diagnosis can not be made positively:

M. D. G., a Jewish ex-Rabbi, age 29, married, of Russian birth, had always been healthy, but had greatly overtaxed himself a few years ago by study. His present occupation is that of a peddler. About two months before he was seen by me he had been much exposed to cold and wet. He felt one day a great weakness coming on in the lower extremities, and to a less extent in the arms. He felt also numbness, prickling, and dead, heavy sensations in the extremities. All this increased until in a day or two he could hardly walk, and could not go up stairs. About this time he had severe pains in one knee, which lasted only a night. His symptoms did not improve, and he finally came to me. There was then the same condition of paresis of the extremities with paræsthesia; the knee-jerk was abolished; there were areas of anæsthesia over the external surface of the legs; there was considerable static and locomotor ataxia. The eye (he had but one) was normal, and he had no girdle pains or sphincter troubles. No degeneration-reaction. Urine 1026, acid, rather dark, no albumin or sugar. Under treatment he gradually improved. Nine months later I saw him again; *the knee-jerk had returned*, and all his symptoms had disappeared.

Case 7.—Neuritis Complicating Locomotor Ataxia.—I have shown to the class on several occasions a patient who had had for a year some slight ataxic symptoms, but had been able to do his work, that of a brakeman, every day, and who believed himself to be suffering only from a paralysis of the left third nerve, which was of several years duration. One

day, not feeling very well, he took a Turkish bath, and next day was in bed with an intensely painful paralysis of the lower extremities. There was exquisite tenderness along the course of the nerves, burning feet, pronounced ataxia, and abolition of knee-jerk. The symptoms seemed to point to the development of a neuritis complicating the original posterior sclerosis, and this is an accident which I believe may sometimes occur in true locomotor ataxia.

The diagnosis of subacute multiple neuritis cannot always be made with certainty. It must be based, 1st. upon the etiology; 2d, on the symptoms; and 3d, upon the course of the disease.

Diagnosis from the Etiology.—Painful symmetrical progressive paralysis, with atrophy coming on after an attack of rheumatism, is probably neuritic.

The same may be said regarding attacks coming on in alcoholic patients. The post mortem evidence collected by Dreschfeld, Schultz, Francotte and Bernhardt shows that almost all cases of alcoholic paralysis are of peripheral origin. Some are, however, I believe, myelo-neuritic.

The paralysis from arsenical poisoning, bi-sulphide and oxide of carbon, and in some cases after the use of lead, are peripheral. The pseudo-tabes after diphtheria and in diabetes is neuritic, but glycosuria may occur in true tabes.

The paralysis and pseudo-ataxia after infective diseases, diphtheria, variola, pneumonia (*Virchow's Archiv*, Vol. 68), measles, typhoid, and occurring in the course of acrodynia and beri-beri, are neuritic.

It is not yet demonstrated that multiple neuritis occurs in children except from beri beri, although Webber and Chapin have reported cases which appear to belong to this category.

Diagnosis from the Symptoms.—Rather sudden onset with marked pains in legs and arms, and sometimes fever, followed by rapid symmetrical atrophic paralysis, are the main characteristics of subacute multiple neuritis. Hyperæsthesia is present at first, with great tenderness of muscles and along the course of the nerves. Later tactile and thermic anæsthesia of moderate type develops.

The specially characteristic symptoms in detail are: Symmetrical ascending paralysis affecting the lower extremities most, and especially the flexors of feet and extensors of arms.

Diagnostic Electrical Reactions.—E. Remak reports a case of generalized neuritis with marked electrical alterations of non-paralyzed nerves and muscles. It was in a woman of 30 years, and followed acute rheumatism. This was followed by burning pains and numbness of the legs and arms, with intention-tremor and some atrophy of hand muscles.

Clonic movements, intention-tremor or athetosis. Muscles of face and extremities, though not paralyzed, only react to severest electrical currents and give polar changes.

Erb noted the degeneration-reaction (milder form) in non-paralyzed muscles—head paralysis (*Arch. f. Psych.*, 1885, v, p. 445). Also Bernhardt (*Berlin. klin. Wochenschr.*, 1878, Nos. 18 and 19), and Buzzard (*Brain*, 1878, vol. 1, p. 121).

Kahler and Pick found the severe form of degeneration in lead paralysis. Beiträge zur Path. u. Path. Anat. des Central nervensystems; Leipzig: 1879; p. 131. So did Kast (*Centralb. f. Nervenheilk*, No. 8, p. 137).

Kahler and Pick (op. cit.) also found these changes in a case diagnosticated at the time as polio myelitis anterior subacuta, but which gives much such a history as that of Remak's case. Bernhardt has also described such a case (*Virchow's Archiv*, 1879, Bd. 78, p. 274). In Schultz's case of alcoholic neuritis marked diminution of E. l., but no qualitative changes.

Rapidly developing atrophy of muscles. Partial degeneration-reaction.

The usual formula being—

Faradic current over muscles—*E*, sensibility lessened; *E*, irritability lessened or absent.

Galvanic current over muscles—*E*, sensibility lessened or absent; *E*, irritability lessened, contractions sluggish. Generally in reversal of poles, but KaCC > AnCC.

Œdema is often marked, without albuminuria. The pulse-rate is high. Sphincters not involved; no decubitus. The face and eye muscles are rarely involved, but occasionally there is optic neuritis. Optic neuritis has been noted by Eichhorst (*Virch. Archiv.*, 1876, Bd. 69, p. 69); Strümpell (*Archiv f. Psych.*, Bd. 14. p. 339); Löwenfeld (*Ueber Multiple Neuritis*, 1885, p. 15); E. Remak (*Neurol. Centralbl.*, No. 14, 1885); Dana (*Brain*, June, 1887).

The burning hands and feet, the peeling of the skin of the extremities, the sometimes sharp demarkation of the paræsthesia of the extremities, are diagnostic points to be noted.

Favorable termination favors the diagnosis of multiple neuritis. The presence of degeneration reaction with retention of voluntary movement favors polio-myelitis. Localization of paralysis in physiological groups of muscles favors polio-myelitis, symmetrical ascending paralysis or poly-neuritis.

The diagnostic points in a case of Schulz's seen by Strümpell were: The multiplicity of the processes attacking the extremity nerves; high grade atrophic paralysis, with highest grade diminution of electrical irritability, without quantitative changes; the slight paræsthesia without anæsthesia; the joint affection; the absence of the tendon-reflex with presence of skin reflexes; tenderness over the great nerve trunks; pains on starting to walk; the eventual return of the tendon-reflexes and normal electrical irritability. The bladder and rectum were, however, somewhat affected.

Diagnostic signs given by L. Löwenfeld in a case of rheumatic multiple neuritis with athetosis were: Motor weakness with fever and sensory disturbance limited to certain nerves; girdle sensations and great sensitiveness of the back muscles; absence of pupillary, bladder, rectal and sexual symptoms; girdle sensations about the extremities; electrical reactions were those of partial degeneration-reaction; there was striking diminution of electrical irritability to both currents, with slight polar changes. This has been found by Brenner and Bernhardt also.

The ordinary course of an acute poly-neuritis is, according to Roger:[32] Sharp attack, with severe pains in extremities, oftenest in lower; often a fever; then paralysis, without contractures, with rapid atrophy. Hyperæsthesia is followed by anæsthesia; tenderness; electrical degeneration reaction.

Initial pains, early, marked sensory disturbances, combined with degenerative muscular atrophy and paresis of extremities, *following acute articular rheumatism*, point to subacute multiple neuritis.[33]

Some particulars may be given regarding the diagnosis of the different forms of multiple neuritis:

:. *Alcoholic neuritis* runs a less acute course, is less progressive, and the paralysis is more confined to the extensor groups. The legs alone are often affected. There is a characteristic hyperæsthesia and hyperalgesia. Cerebral symptoms are frequent. The gait in the pseudo-tabitic cases is modified from that of true tabes by the fact that, the extensors of the feet being paretic, the foot is brought down flat.

The diagnostic signs of *alcoholic neuritis*, as given by Oetlinger (loc. cit.), are: The symmetrical paralysis, almost always beginning in the lower extremities, and affecting especially the common extensors of the foot and the extensor hallucis. Bladder, rectal, facial and eye paralyses are not present. Ataxia is not constant, nor are contractures. In chronic forms there is hyperæsthesia; in acute forms analgesia. Generally there there is œdema and trophic disturbances of the skin. Tendon reflex always absent.

There are three forms: mild, chronic and acute. The prevalence in women was not observed by Oetlinger. The ataxia was static only in a case described by Lilienfeld.

Besides the points given, the alcoholic patient may suffer from central scotoma; tabetics have a more general narrowing of the visual field (Bernhardt).

Optic neuritis is seen in acute myelitis, multiple sclerosis, multiple neuritis, and alcoholic neuritis, but never in true tabes.

There are mental disturbances in alcoholic cases, and women are oftener affected.

The degeneration-reactions are temporary, and only noted at the height of the disease. The ataxia is static only in some cases. There may be rapid pulse and hyperidrosis.

In *arsenical neuritis*, a characteristic trophic disturbance is the entire shedding of the epidermis of the feet and hands. A hysterical mental condition is sometimes present. The paralysis may be motor and atrophic, or may take a pseudo-tabetic form, the last being rare.

A multiple neuritis of the sensory or ataxic form is differentiated easily from locomotor ataxia usually, by the changed electrical reactions (high grade diminution of E. irritability, with or without qualitative changes). In tabes, at the beginning, there may be an increased E. I., which later decreases without any degeneration-reaction.

There is an ataxic neuritis seen in early atrophic paralysis.

The pupillary symptoms, girdle-pains, bladder and rectal disturbances are, as a rule, absent in neuritis.

There may be slight pelvic symptoms in ataxic neuritis.

The tendon reflex, though apparently absent, may be brought out sometimes by Jendressik's method in neuritis; never in tabes (Moeli).

In *post diphtheritic multiple neuritis* there are generally paralyses of the soft palate first, then general muscular feebleness, ataxia and loss of tendon-reflex. In a few cases the external eye muscles are affected, causing exophthalmoplegia externa.[34]

Subacute multiple degeneration neuritis is to be distinguished clinically from *acute ascending spinal paralysis* (Landry's). In the latter disease there is, it is true, a multiple neuritis, in some cases at least, but its cause and course, as well as the anatomical changes in the nerves, are different.

Myelo neuritis.—Multiple neuritis may be combined with a polio-myelitis, and then symptoms of both diseases may be present. Leyden, Rosenthal and Déjerine have found cases running a course like that of multiple neuritis, with, on autopsy, evidences of both neuritis and myelitis. Eisenlohr has reported[36] a case that is particularly striking. J. J. Putnam reports two cases of painful myelo-neuritis.

Central spinal lesions predispose to neuritis. Déjerine reports[36] two cases of tabes with extensive degenerative neuritis.

Illustrations of symmetrical ascending neuritis and myelitis are given by Grainger Stewart,[37] who reports three cases. The patients showed the signs of multiple neuritis with ascending paralysis, beginning in all four extremities. Post-mortem examination showed secondary degeneration of the columns of Goll and of the direct cerebellar tract.

[32] L'Encéphale, 1885, No. 2.

[33] Kast. Archiv. f. Psych., 1881, Bd. xii, p. 266; and F. C. Müller, Ibid., Bd. xiv, p. 669.

[34] For bibliography see P. Meyer, Virchow's Archiv, Bd. 85, p. 214. Also Mendre, Neurol. Centralbl., 1885, No. 6.

[35] Neur. Centralbl., 1884.

[36] Brain, 1884, p. 558.

[37] Journ of Nerv. and Ment. Disease. 1882, p. 212.

TUBERCULOSIS OF BONES AND JOINTS.

Read before the Northwestern Ohio Medical Association, at Lima, Ohio, December 9, 1886.

BY M. STAMM, M.D.,

OF FREMONT, OHIO.

(*Continued from page 262.*)

Cases of tuberculous dropsy of the joint should, as soon as diagnosis is possible, be operated upon, as all other means will have little effect. This operation generally consists in making incisions into the joint, removing the swelled synovialis. After having washed out the joint with disinfecting fluid, dust it over with iodoform, put in drainage-tubes, etc. The idea of preventing the spread of tuberculosis from an affected joint is less an indication for operative measures than the local condition itself. Such measures, amputation especially, may sometimes be called for to cut off the dangers of septicæmia, pyæmia and amyloid degeneration of the kidney and other organs; it is indeed surprising to see the rapid general improvement of the patient following amputation.

Where we are certain of a large osteal focus or some partial destruction of the joint, we are not necessarily compelled to make a typical resection or amputation, but, thanks to the excellent effect of iodoform in such conditions, a partial resection, that is, the removal of the affected parts only, gives very satisfactory results.

A small circumscribed abscess may, after the joint is immobilized, heal spontaneously and leave a fistula only for a short time. Should it, however, be necessary to open such an abscess, the best way is to make an incision, and should you have to find your way deep between the muscles or in the neighborhood of the blood-vessels, dilate with a pair of forceps, which may be passed along a probe. After being able to introduce a finger you may scrape off the tuberculous granulations with the nail, sponge, or sharp spoon. Then, if necessary, you make a counter-opening for drainage-tubes, rub in some iodoform, and apply some antiseptic dressing. Should, however, the whole joint be filled with matter, simple incisions will be of no avail, since the synovial tuberculosis is more diffuse and has a tendency to cheesy decay. We may, in cases of children, at times succeed by making large incisions and removing the affected synovialis; in adults, on the contrary, resections, or more often amputations, are the only resort.

In most cases of tuberculous fistula it would be bad practice to introduce a spoon and try to scoop it out, as we never can be certain whether we have removed all the diseased parts. It is much better in such cases to open the joint freely and remove whatever is affected with knife and chisel; this can often be done without damaging the function of the joint. It is scarcely necessary to say that this should be done by the bloodless method. After the affected bone and synovial membrane has been removed, we should irrigate the joint with some disinfecting fluid (carbolic acid, corrosive sublimate or salicylic acid), under some pressure, in order to clean it from small spicula of bone or shreds of tissue, then dry the parts and rub some iodoform into the walls of the joint. We then introduce drainage-tubes and apply antiseptic dressings, which should exercise some compression to prevent hæmorrhage after the rubber bandage is loosened. The leg should for the first day or two be kept in a raised, almost perpendicular position, to prevent loss of blood. The results in purely synovial fungus are not so favorable, owing to the impossibility of removing the capsule of the joint completely without resection of the epiphysis; typical resection is therefore the only curative way.

It cannot be denied that there are cases so grave in which local resection, right from the start, would be the best resort. But, unfortunately, diagnosis will not always come to our aid at the right time, since only when the symptoms do not improve; if pain, instead of subsiding, increases after a long course of rational treatment, our suspicion, that extensive destruction of the bones by a large granulative focus or a large wedge shaped sequestrum are the underlying causes, becomes hardened into a fact. At such a time, then, we are generally obliged to make a typical resection or amputation. Perhaps it is hardly necessary to add that in younger patients the conservative plan should not be so easily abandoned as in older individuals, especially above 50 years of age, as it is well known that resections in children leave bad functional results; and moreover, these processes have a better tendency to heal at an early age than in later life. The fact, also, that children can better afford to sacrifice three or four years' time for treatment than grown persons who have to earn a living, should have some weight with us. But steady fever as a sign of suppuration and fistula, acute nephritis or amyloid degeneration of some organs, are, even in youth, a vital indication for resection or amputation.

A large cold abscess calls for an early resection, although amputation in most cases, especially above the age of 30 years, will be the best measure. The technique of resection should be carried out with a view to remove all the pathological parts of the joint. Long incisions, usually more than one, should be made, in order to expose all the synovial folds, as it is important to remove whatever is diseased with the knife, forceps or scissors. These incisions can generally be so managed as to obviate any transverse cut or section of the muscles, so that, if it was only necessary to make a partial resection, the function of the joint would not suffer too much by it. We should make it a rule not to remove of the bone more than what is really affected or is necessary to get free access to the diseased synovialis, in order to remove that portion fully. The latter can be removed better with forceps and scissors than with the sharp spoon. Ligaments and periosteum may, as a rule, be left intact. The affected bone is best removed in children with the knife, in adults with the chisel, saw or spoon, and we should not hesitate to leave an irregular surface where only a part of the epiphysis is affected. The bloodless method, as well as the application of iodoform, have essentially improved our results in such resections.

Tuberculosis of the Hip Joint.—We occasionally meet some slight subacute forms of this affection in the hip joint, which may recover in the course of some weeks or months after the application of ice or tr. iodine, also after the use of pulley, Taylor's splint, or Hutchinson's plan (high-soled shoe on the sound leg with a pair of crutches). But these cases have a great tendency to relapse. There are probably some small foci which do not lead to extensive infection. The majority of cases, however, are of a grave nature, as the bony parts, acetabulum and head of the femur, are generally greatly disorganized. Caries sicca presents yet a comparatively favorable prognosis, although it has, by virtue of its cicatricial atrophy, a tendency to stiffen the joint and, as it occurs principally in youthful subjects, also to shorten the limb from one-half to two inches. A conservative treatment is best indicated in these cases. A plaster of Paris bandage, as long as there is no contracture, is of great advantage. We should not forget to tell the family that a very long time is required for a cure. Taylor's splint answered very well in a few of my cases, and gave also satisfactory

results in the hands of others. Contractures are best reduced under anæsthesia, if necessary in several sittings. In the majority of cases we find cheesy granulation with suppuration. The localized abscess generally points at the front part of the joint; much less frequently along the iliopsoas muscle near the lesser trochanter, and we sometimes find great difficulty in tracing the fistula to its origin.

Of very great consequence are those cases which break into the pelvis. Resection is the only safe means to give an outlet to the matter, but it should at the same time be combined with an incision near the anterior superior spinous process. Multiple abscesses with fluctuation in front and behind the joint, as well as fistulæ that have no tendency to heal, also demand resection. The diagnosis of the grave osteal processes is difficult before they burrow into the joint. In localized foci of the neck or head of the femur, also of the upper rim of the acetabulum near the inferior spinous process, we obtain good results, without injury to the function of the joint, by careful removal.

Spontaneous luxation of the joint in these cases points to disorganization of the bony parts, principally the acetabulum; and here we need not wait for the formation of an abscess, but resect at an early time. Children, even at an age of 1½ years, seem to furnish good results after resection, and we should not feel altogether discouraged in cases even above 50 years of age. We should never neglect to remove all the diseased portions of the acetabulum or capsute of the joint. The incision is best made in a line drawn from the posterior spinous process to the middle of the trochanter, it should be made deep down to the bone and can, if necessary, be extended further. Should the acetabulum be affected, the chisel is the best instrument to remove whatever is diseased. Should an iliac abscess be the result of perforation, it should be opened below the anterior superior spinous process by a large incision, in order to free its inner walls from all tuberculous granulations, a drainage-tube may then be left in there, and one also near the trochanter. If we use iodoform, the first antiseptic dressing need not be disturbed for eight or ten days, the others can be left even for a longer time, so that we seldom have to change it more than three times before the wound is healed. Extension to the leg is commonly used in some way or other for the after-treatment.

Knee Joint.—In the knee joint we find all the different forms of tuberculosis described in this paper. Tuberculous dropsy seems to have almost an exclusive seat in this joint. As a characteristic feature of this joint we may mention that grave osteal processes even have sometimes a tendency to isolate themselves. A partition is, so to say, formed by the inflammatory tissue, almost amounting to a new synovial sac, which keeps in this way the other half of the joint intact. The diseased patella may also adhere to the femur by a ring shaped septum. This explains why a comparatively good function is left even after a protracted course of disease. A great tendency is shown for contracture; early treatment, however, can do a great deal to prevent this. In patients up to 14 years about the same frequency is observed between osteal and synovial processes, whereas in adults osteal processes seem to predominate. The femoral condyles are more often involved than the head of the tibia. Amputation should be reserved for old people, or for patients who have a complication with nephritis or septicæmia; eventually also for cases in which the leg is so shortened and deformed that no good use can be expected from resection.

We have already seen that a number of our best authorities raise their voice in condemnation of a typical resection of the knee joint in children below 14 years. But still this is no cause for remaining idle in such cases, as a vast deal of good can be accomplished by the sharp spoon or by partial resection. These partial resections are best made by a curved incision at the inner side of the joint, beginning at the tibia near the insertion of the ligamentum patellæ, with the convexity inwards; after having reached the upper part of the joint turn towards the middle line, where you readily find the distended synovial sac. As it is necessary to get free access to the synovial membrane, another incision at the outside, in front of the lateral ligament, should be made. Very little difficulty is thus found in the removal of the anterior part of the capsule, cartilage or bone. If this is not sufficient, we may nip the ligamentum patellæ slightly, and pull it outwards; or, if necessary, cut the internal and crucial ligaments, which will give us all the room desired after flexing the limb.

A very ingenious method has been recently reported by Israel, which was followed by no less brilliant results; brilliant because he succeeded in preserving the function of the joint after having removed the capsule of the joint completely. He made a flap starting from the condyles and reaching below the tuberosity of the tibia, then by means of the saw he separated the tuberosity in an oblique direction from the tibia, so that it remained with the ligamentum patellæ attached to the flap. As the synovialis was found thickened and covered with tuberculous granulations, it was totally removed in connection with the crucial ligaments and the semilunar cartilage. After having inserted the drainage-tube, he nailed the tuberosity to the tibia. As soon as the wound healed by first intention patient was induced to use passive movement of the joint. The operation was performed in March, 1884, and patient is now about 10 years old; he can bend his leg at an angle of 100°, has full strength in its use, with no shortening and with natural shape of the joint.

Typical resections can be made by different methods. A transverse incision across the middle of the patella, and then dividing the latter with the saw, is very much in favor with some surgeons. The patella has, of course, to be wired together at the completion of the operation. In one case I followed Hahn's method, which consists in making an incision at the inner side, starting from a point as far back as possible at the line of the joint, cutting the quadriceps muscle close above the patella, and ending at the outside at a corresponding point. The advantages of this method seem to be that the wound heals faster,

as it is nowhere in immediate contact with the bone; it also enables better drainage and you get freer access to all the parts of the joint. The patella also stays better in its place, and not as many blood-vessels have to be cut as in other methods, so there is no danger of secondary hæmorrhage. Steel nails about three inches long, one end shaped like the point of a trocar and the other with a small head, are now used to unite the joint-ends more firmly. I kept my patient in a plaster-of Paris bandage with wire frame.

Ankle and Tarsal Joints.—The osteal processes seem to predominate in the tarsal joint; tuberculous dropsy is found in but a few cases. In children a sequestrum of the tibia gives a characteristic clinical picture (thickening of the tibia, fistula, and consecutive swelling of the whole joint). A cheesy, granulating depot or sequestrum of the astragalus may cause perforation into the ankle, talo-calcaneus or navicular joint, and from there extend into the different bones. Suppuration occurs frequently; we find the abscess distending the extensor muscles in front, posteriorly it is buried under the tendo Achillis. Milder forms may heal spontaneously in children, less so in adults; there some operative interference is generally imperative. Swelling below the malleoli, at the upper border of the calcaneus, points to an affection of this bone. Swelling over the neck of the astragalus, to the region of the scaphoid bone, signifies affection of the navicular joint. Taking these points into consideration and finding pain on moving the different joints, we will be enabled to diagnose with some accuracy the extent and seat of the affections of the several joints.

Treatment of the milder forms is best carried on by means of the plaster-of-Paris bandage, but if extensive suppuration should set in, we better resort to some kind of operation. Destruction has in some cases gone so far that no better choice than amputation is left us. Last year I had to amputate the leg of a young man, in which all the tarsal bones and the largest part of the shaft of the tibia were disorganized. But cases where the epiphysis of the tibia, fibula and astragalus, even part of the os calcis, are affected, quite often furnish very good results after resection. During the last two years I resected the ankle joints of two young men with very satisfactory results. In one case I excised one inch of the astragalus, one-half inch of the tibia, and left the fibula intact; the wound was healed by first intention on the tenth day, except the drainage openings. Two weeks after operation patient rode home (about twenty-two miles) in a wagon without the least discomfort. Both of the patients have now good use of their legs. I followed in this case Koenig's method, which I enthusiastically endorse. This consists in making an incision immediately in front of the inner malleolus down to the scaphoid bone; a similar incision is made in front of the external malleolus down to the talo-navicular joint. This gives you ample scope for the removal of the bones and capsule. The same holds true in affections of the tarsal bones. I removed four years ago in a man sixty-four years of age, both cuneiform and part of the first metatarsal bones with excellent result. Last summer I had to remove, in a lad 16 years old, part of the scaphoid, cuboid, both cuneiform and first metatarsal bones; only a shell was left of all these bones. Patient suffered before the operation for three years, and is now able to walk without a cane and do some work in the field.

Shoulder Joint.—This joint is not so subject to tuberculous affections as the other joints, and we are not able to give any definite reason for this. As we have mentioned before, caries sicca seems to have quite a predilection for this joint, but all the other forms are occasionally found. In most of the cases we are obliged to resect, provided there are no distinct signs of phthisis present. About four years ago I made a resection on a man 44 years old; the joint was distended with matter; the glenoid cavity had to be scooped out, and about 2½ inches were removed of the humerus. The patient is well satisfied with the use of his arm. It is best to make the incision in front of the acromion process, along the intertubercular groove, and about four inches long.

Elbow Joint.—Osteal tuberculosis seems to be the most frequent in this joint, principally at the olecranon, less often at the condyles of the humerus, and very seldom at the radius. Conservative treatment seems to promise poor success, this seems to be due to the complicated mechanism of the joint. We should therefore not postpone resection too long, as it is almost devoid of danger, and the functional result equally as good as after protracted conservative treatment. Partial excisions in some cases are accomplishing all we can reasonably wish for. Israel had splendid results even after removing the entire capsule of the joint. The typical resection is best made by an incision about four inches long over the inner side of the olecranon; the periosteum should, if possible, be saved.

Carpal Joint.—The synovial membrane seems in this joint to be more frequently affected than the bones. So long as such affections remain circumscribed, or occur in children, a cure, although often with some deformity, may be brought about by the compressive bandage. In adults, however, where the whole joint is involved, tuberculosis of the lungs is threatened quite early. In such cases resection should soon be called into requisition. This is best made by an incision about three inches long, running, at the dorsum of the hand, from the ulnar side of the second metacarpal bone over the epiphysis of the radius. After having cut the skin, you get down between the extensor indicis on one side, and the extensor carpi radialis brevis and extensor pollicis longus on the other side, then you divide the carpal ligament and capsule of the joint. push the tissue towards the ulna, and when you get at the bones try to save of the periosteum as much as possible. In persons above 40 years, where there is extensive caries of the bones and considerable infiltration of the soft parts. running along with chronic bronchial catarrh and profuse night sweats, fever and pain, yellow color of the face, we should not temporize with any other measure, but proceed to amputation without delay.

THE CLIMATIC TREATMENT OF DISEASE.

Read before the Chicago Medical Society, February 7, 1887.

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There is probably no field in therapeutics in which the general practitioner becomes so quickly lost as that of the climatic treatment of disease. He seldom has the time or opportunities to investigate the subject personally, and what little knowledge of the subject he possesses has been gleaned from the voluminous literature written by various authors on this topic. Even this knowledge is ill defined. There is a great difference of opinion among writers on climatology as to what should be the altitude, temperature, dryness or moisture, etc., for the treatment of various pulmonary diseases. The purpose of this and following papers will be to formulate the desiderata for climates in the treatment of various pulmonary diseases.

Inasmuch as phthisis pulmonalis constitutes the largest class of these diseases, we will first briefly note what eminent authorities say are the requisites in the climatic treatment of this disease.

I quote the opinion of Dr. C. J. B. Williams: "Our great object in consumptive diseases is to give the patient as pure an atmosphere as possible, of such thermometrical, hygrometrical, and other qualities, that it can be breathed safely and freely by him. It should therefore be free from extremes, humid or dry, and neither too still nor too windy, and its influence on his frame should be furthered by frequent exercise of various kinds carried out in cheerful sunshine, uninterrupted by rainy, misty, or windy weather. For consumption originating in septic influences, a climate of great pureness and dryness would seem to be indicated, and this is to be found at considerable heights above the sea level. In these cases a mountainous climate is recommended."

Professor Ludwig Buhl, of Munich, a high authority on tuberculosis, says: "For commencing or already established chronicity, the (I might almost say) *principle cure is pure air*. There must be plenty of air, and it must be free, properly changed, without dust, rather dry, and not subject to great changes of temperature: this latter is particularly necessary in a medium degree of moisture. The residence should be in a spot well sheltered from the wind, and on well drained soil, with large airy rooms. South of the Alps (in Europe), if possible, and during the summer, an elevation of from 2,500 to 3,000 feet should be sought. In the spring and autumn this may be changed for an elevation of from 1,500 to 2,000 feet. In winter the patient may dwell either near the sea, or at an elevation of from 500 to 1,000 feet."

Dr. J. Hughes Bennett says: "What is really required is a cool temperate climate, which should range from 55° to 66° F. during the day, and 45° to 55° at night. The air should be dry or with only slight moisture, little rain, and a clear bright sun. Such an exhilarating climate, in which exercise can be taken almost daily in the open air during the winter and spring months, is the best for the consumptive patient."

From the opinions of these authorities we can tabulate certain facts:

1. The climate must be such as to insure *pure air free from dust, or poisonous germs.*

2. Such air is more apt to be found at an elevation of 1,000 feet, or more, above the sea level.

3. There should be an equable temperature, neither too warm nor too cold, the air should be in continuous motion and yet there should be no wind storms.

4. There should be plenty of sunshine.

5. The landscape should be pleasing.

6. The health resort should be easily accessible and home comforts with congenial society easily obtained.

7. The patient should be able to take almost daily outdoor exercise without fatigue.

When patients are able to find homes in climates which nearly fulfil all these conditions, clinical observations demonstrate that consumption may not only often be arrested but cured. It is a well-known fact in mycology that a modification of the environment often prevents bacteria from thriving and multiplying, and this may account for the improvement which often follows the residence of a consumptive in a pure climate where he can take exercise. Bodily nutrition is increased, the power of resistance to disease is augmented, and the germs of consumption die. The disappearance of the disease is heralded by the improvement of the appetite and the digestion, the increase in force of the circulation, the stimulation of the respiratory functions with increase of normal oxidation and bodily heat. Thus with the improvement of the general bodily nutrition is favored that condition of the lung where there is absorption of the inflammatory exudates present in incipient phthisis, or the formation of cicatrized tissue in the later stages of the disease.

Having thus considered the climatic conditions favorable for the treatment of consumption, we wish to pass in review the claims which certain localities in the United States present as being suitable places to send consumptive patients. The first locality we will notice is

ASHEVILLE, N. C.

In western North Carolina, between the Blue Ridge on the east and the Alleghanies on the west, lies one of the most picturesque valleys in the South. In this valley is the village of Asheville. It is on the line of the Western North Carolina Railroad and has about 5,000 inhabitants. It has long been known as a summer resort, and for this reason its popularity as a health resort has not grown rapidly. But there are many reasons why it should attract the attention of the profession more. In the first place the altitude of Asheville is 2,250 feet above the sea level. The air in the summer is pure, cool and invigorating, and in the winter mild on account of the latitude. The climate is pleasant and salubrious. There is a large proportion of sunshiny days so that outdoor ex

ercise can be taken daily, except when it rains. After a rain it is not easy to take exercise on account of the clay soil retaining the moisture for some time. However, the precipitation of moisture is quite evenly distributed throughout the year, being excessive at no time. What little snowfall there may be seldom remains long, even on the mountains, and its stay in the valley may be measured by hours.

The average rainfall in inches of the different seasons for a period of eleven years is shown to be as follows:

Spring	10.1	inches.
Summer	13.5	"
Autumn	7.1	"
Winter	9.5	"
Total	4.02	"

Temperature.—The record at Asheville shows the following mean temperature for the seasons:

Spring	54.3	deg. F.
Summer	71.3	"
Autumn	55.3	"
Winter	27.2	"
Yearly mean	55.3	"

In a series of nine years the mercury did not rise above 90° F. any day in the summer. During this season the nights are always cool, permitting refreshing sleep. In winter it is very seldom that a zero temperature is reached, while the air is comfortable, dry, clear and invigorating.

Dr. H. O. Marcy, of Boston, who has personally investigated the claims of this region, says he has sent a large number of patients there with excellent results. And there is not wanting testimony from many physicians who have seen the benefits which result from a residence there during the spring and summer months.

However, there are places more accessible to persons living in the North. One point that is easily reached by Northern tourists is

MARIETTA, GA.

This village is on the line of the Western and Atlantic Railroad, about twenty miles northwest of Atlanta and 120 southeast of Chattanooga, Tennessee. Its altitude is 1,132 feet. About ten miles from the town is the Kennesaw Mountain, from whose top Gen. Sherman made the famous signal to Corse: "Hold the fort; for I am coming." This mountain has an altitude of 1,800 feet. The scenery about Marietta is delightful. For outdoor exercise one can take pleasant rambles, or can secure good livery at low figures and take the most delightful drives. If the rural scenery becomes too monotonous one can go to Atlanta, which is one of the most beautiful cities in the South. But for amusements it will seldom be necessary for the invalid to leave the village, for the proprietor of the Whitlock House, the health resort at Marietta, is ever providing for the social enjoyments of his guests by excursions, drives, etc. The air is so fresh and invigorating that the temptation to take outdoor exercise cannot be resisted. Malaria is unknown. The drinking-water is pure, as has been attested by Prof. W. S. Haines, of Rush Medical College: "The specimen of water from Marietta, Ga., submitted to me for examination, has been carefully tested and found to be of excellent quality for drinking purposes. It contains but a small amount of mineral matters and only a trace of organic compounds."

The society in Marietta is composed of cultured, kind hearted and hospitable people. And the fact that most interests the invalid is that here can be found all home comforts. It is not a place where the necessities, not mentioning the luxuries, of life are absent.

The temperature of Marietta is mild throughout the year. In 1885 the lowest mean monthly temperature was in January, 30.3° F. The yearly mean temperature was 59.4° F. During the winter of the same year there was no snow at Marietta. Snow seldom falls and only remains a very brief period. Of course this place is as yet little known, and yet it would seem to afford a place where those who wish to find a quiet home where the climate is pleasant, where the air is somewhat rare and pure, and where outdoor exercise can be taken, can live comfortably.

However, a large number of consumptives, when they go to a quiet health resort, suffer from homesickness, and become so despondent that they refuse to take the exercise so essential as a remedial measure in this disease. If they could find a locality where there is a combination of all the requisites of a perfect climate for consumptives, and also the opportunity to enjoy city life with all its attendant evidences of civilization. they could be placed under the ideal requirements for treatment. The only locality that I know of where there is the possibility of such a combination is

LOOKOUT MOUNTAIN, TENN.

This mountain has been memorable since Hooker fought his battle on its summit in mid-air, but it is only recently that it has been thought to be desirable as a health resort. For this reason we cannot give any records of temperature, humidity, etc. But it matters little, for temperature charts do not always prove to be of much value. Again, we cannot give extensive statistics as to the benefit to be derived from a residence on this mountain, but we can enumerate the features which will commend themselves to all fair-minded physicians as those demanded in health resorts for consumptives.

This mountain has an altitude of from 1,500 to 3,000 feet. The altitude is somewhat greater than that of Marietta or Asheville. The advantage in this is that it insures a greater purity of the atmosphere and increases the activity of the respiratory functions. As for the scenery that greets the eye of the observer as he stands on this elevation, it is not in our power to give you a word picture of it. Suffice it to say, that to the lover of nature are presented views of which he will never weary, nor forget. Daily rambles over the sides of the mountain disclose new beauties in the landscape, and urge one to take the wonted exercise.

The sunshine is abundant, and the temperature,

even in winter, seldom is low as is evidenced by the fact that during this winter there has been almost no perceptible snow on the mountain.

Recently there has been completed a cable railroad winding up the mountain, thus connecting it with Chattanooga. The trip from the top of the mountain to Chattanooga can be made in twenty-five minutes. This enables one to live on Lookout Mountain and transact business, attend church or places of amusement, or do shopping in Chattanooga.

Chattanooga is now a busy, enterprising city of about 30,000 inhabitants, having doubled its population in the last twelve years. Northern enterprise has invaded the city, and the result is a grand development of her resources. Wealthy residents are building their suburban residences on Lookout Mountain, and the construction of the cable road was the outgrowth of the demand for building spots on the mountain. And yet this will prove a boon to sickly humanity. It enables the consumptive patients of the North, South, East and West to go to a place where are as nearly combined as it is possible on earth all the requisites for a climate in which consumptives should live. On Lookout Mountain cottages can be built in which patients can reside the year round. The cottage hospital plan secures to their inmates quiet, purity of air, such temperature in each room as each patient demands, home comforts, especially when the patient's family is along, and independence of action. By a residence on this mountain there are secured the following advantages:

1. Purity of air.
2. A proper elevation above the sea level.
3. Equable temperature, and air in motion, yet no wind storms.
4. Sunshine.
5. Outdoor exercise, pleasing landscape, home comforts and the advantage of close proximity to a city.

That these advantages can be secured is not merely an assertion, but fact that is susceptible of proof, and in due course of time the proof will be forthcoming.

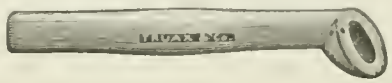
MODIFIED INTUBATION INSTRUMENTS.

Exhibited to the Chicago Medical Society, February 7, 1887,

BY F. E. WAXHAM, M.D.,
OF CHICAGO.

I wish to say a few words this evening in regard to intubation of the larynx in connection with the specimens and instruments I have to present. About thirty years ago a new operation was proposed as a substitute for tracheotomy, by M. Bouchut, of France, and so great was the opposition to this new operation, which was styled tubage of the larynx, that a committee headed by Trousseau, appointed by the Academy of Medicine, reported adversely in regard to it, and the operation was so deeply buried in oblivion, that early operators in this country were not even aware of the attempts and failure of Bouchut.

The most earnest advocates of intubation do not consider that the instruments are perfect, indeed the operation is yet in its early infancy, and it may be years before the method is fully and perfectly developed. One of the chief objections to the operation, indeed the only valid objection, is the difficulty of swallowing, the danger caused by the falling of food and fluid into the bronchial tubes through the canula, and the too frequent occurrence of broncho-pneumonia. I would not exaggerate this danger, but certainly it is true that many patients die of broncho-pneumonia from this source. To overcome this difficulty I have had Messrs. Charles Truax & Co., of this city, modify the O'Dwyer tubes, by making them with smaller heads.



Cut No. 1.—O'Dwyer Tube.

Cut No. 2.—Waxham's Modified Tube.

The tube is prevented from slipping into the trachea, by a rubber collar. (See cut No. 3.) To

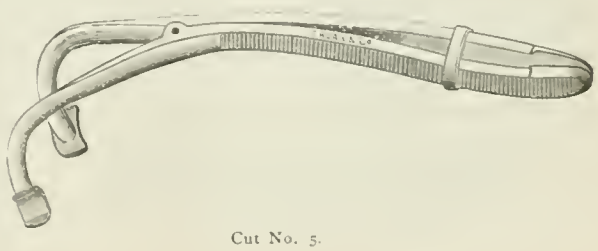
Cut No. 3.

this rubber collar is attached a flap, or artificial epiglottis. (See cut No. 4.) During the act of degluti-

Cut No. 4.

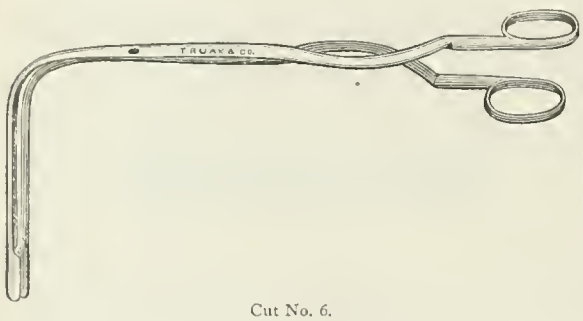
tion the larynx rises and presses against the base of the tongue and the epiglottis, and the pressure of the epiglottis holds the rubber cap, or artificial epiglottis, over the aperture of the tube, thus preventing the dropping of solids into it, and as deglutition ceases, the larynx falls and the elasticity of the rubber throws it upwards. This rubber attachment does not entirely prevent the falling of liquids, of water particularly, into the tube, but it is of very great assistance in swallowing solids and semi solids. I have used this modification in a number of cases with good results, and I have now a little patient convalescing from a desperate attack of diphtheritic croup, in which this modification was used.

I would also present a modification of the mouth gag. (See cut No. 5.) In the old gag the extremities are



Cut No. 5.

liable to strike the shoulder, especially if the child is not held well and is allowed to slip down in the lap of the attendant, the extremity of the gag striking the shoulder and throwing it out of the mouth. This gag passes back of the head and we avoid the danger of the gag being displaced by pressure of the shoulder. This gag was first suggested by Dr. McWilliams, of this city, and has been in the market for several months. There is still another danger that may follow the introduction of the tube, and that is the detachment of membrane below the tube, or the pushing of membrane down ahead of the tube when it is introduced. An accident of this nature occurred to me recently; a tube was passed down into the larynx and the respiration at once ceased, the child turned blue and seemed upon the point of death. The tube was at once removed, but the respiration was only slightly improved and the tube was again introduced, with the same result. It was again removed and the trachea forceps (see cut No. 6) that I have devised for



Cut No. 6.

this purpose were introduced into the mouth and a mass of membrane, a perfect cast of the trachea and the two larger bronchial tubes, removed. After the removal of this cast the tube was again introduced, and respiration was easy. Without these forceps an immediate tracheotomy would have been necessary.

In this connection I present to the Society a membranous cast from the trachea, larynx and bronchial tubes of the late Dr. Newton. This specimen is remarkable not only for its thickness and its extent but for the rapidity of its growth; it was produced within three or four days after the invasion of the larynx. The fate of Dr. Newton, whose early death we all regret most sincerely, teaches us a sad lesson; it teaches us the danger that besets the faithful physician, and the necessity of taking every possible precaution against the contraction of this hydra headed monster, this justly dreaded disease.

To those practising intubation I would advise that an ordinary rubber cot with the end cut off should be slipped over the forefinger, and then during the operation, if the gag is displaced, the finger is protected; as an additional protection, it will be well for the operator to use a respirator, (see cut No. 7.) an ordinary pad of antiseptic gauze with tape attached to secure it in place. This pad should be passed over the mouth and nostrils and should be used by the physician when inspecting the throat or when operating upon a bad diphtheritic case. I believe it is a duty that every physician owes to himself, his family and friends, to take these precautions, especially in the treatment of bad diphtheritic cases.

Cut No. 7.

NEURITIS PLANTARIS; A CLINICAL RECORD.

Read before the St. Louis Medical Society, March 5, 1887.

BY C. H. HUGHES, M.D.,

OF ST. LOUIS, MO.

This rare, painful and formidable malady of the terminal distributions of the two popliteal nerves in the foot is worthy of the physician's especial study. It comes on as the sequel, usually, of a low form of blood-depraving fever, like typhoid or protracted malarial, with typhoid-like depression, or in the latter stages of phthisis; but it may be the sequel of an exhausting, long-continued rheumatism, or possibly of a badly-managed or neglected and chronic gonorrhœa, as Ross asserts, though I have never seen this as a result of that disease. It appeared as a conjoint symptom in some of the cases of caisson disease at the time of the building of the St. Louis Bridge, and I have seen it follow upon a residence in the high altitudes of Colorado, and an attack of the so-called mountain fever of that region. It comes upon a nervous organism, shattered and tremulous, and choreic, and the painful paroxysms are agonizing. The patient cries out with pain, and often cannot rest at night, even after prolonged wakefulness, without powerful anodynes. The slightest touch, such as the application of local anodynes with the hair pencil, to the painful parts, often cannot comfortably be borne. A peculiar burning sensation, without thermometric evidence accompanies the pain. The pain is usually localized in the balls and the tips of the three toes supplied by the internal plantar nerve, and in the heel and plantar arch of the foot, but sometimes implicates also the two smaller toes, which are supplied from the external branch of the plantar nerve, the fifth toe being supplied exclusively by the external plantar, while a filament from the internal joins with the external, in giving the fourth its æsthesiodic supply.

Misleading vasomotor disturbances, suggesting erysipelas, or incubating abscess, are sometimes associated with this form of neuralgia, but in those intensely severe cases which have fallen under my observation, the feet have been pale and dry. A sour sweat has been mentioned as associated with some quite similar cases described by Ross. I have never observed this.

Poulticing does not help these cases, and the metatarsal and tarsal swelling, and fluctuation which usually follows this procedure, sometimes excites the fear of forming abscesses, but this soon subsides if the poultices are not renewed. Intense dry heat or a draft of cold air alike painful to the patient, and

the weight of the bedclothes cannot be tolerated by the toes, or even a feather pillow, sometimes, by the soles of the feet; but hot water beginning with a temperature of 100° and gradually raised from 130° to 150° is often a source of comfort to the patient. Ether and Goulard's extract give a little temporary relief, but are often too painfully cold: chloroform does better but is sometimes too burning. A paint of equal parts of chloral and camphor with morphia or belladonna is pretty well borne in some cases, and gives considerable, and sometimes complete local relief for a time. Cocaine, likewise, but is usually too painful when first applied. Iodine is not worth much, nor is oil of winter-green, and the latter after a poultice is excruciatingly painful to the patient. In fact, to precede these applications when they can be borne with poultices is apt to make them unbearable.

Wier Mitchell was the first to describe an affection similar to this but not the same, under the name of erythemomegalalgia. He regarded it as a rare vasomotor neurosis of the extremeties, and Ross, the only neurological writer, who, to my knowledge, refers to this subject, regards it as plantar neuralgia, "inasmuch as the vasomotor disorders are preceded and accompanied by some paroxysms of pain." My cases may possibly have been more exclusively neuralgic or neuritic, for there was no redness in any of them. The present case is the third or fourth well-defined case of this kind coming under my observation. They are very rare, as Mitchell says, in the description of his cases. Anstie makes no note of them, and the cases described by Elliotson, which Ross thinks were plantar neuritis from gonorrhœa, were probably cases of gonorrhical rheumatism, involving the tendonous portions of the muscles of the sole of the foot and plantar fascia.

The history of the following case is somewhat unique, and while it might be described as a newly discovered disease, I think it well to group it as only a variety of the already noted cases of plantar neuritis and tarsal hyperalgesia.

About the 1st of August, 1886, G. B., a young man of 19 years, was taken sick in the mountains of Colorado, thirty-six miles west of Gunnison, at or near Dry Fork, of Gunnison River, with a chill. A low form of fever followed, called in that section, mountain fever. He was brought to his home in Illinois. After, or about the end of the fifth week of his illness, he had sharp, lancinating pains in the toes and under the plantar fascia. The tips of the three inner toes, supplied by branches from the internal plantar nerve, could bear not the softest wet sponge of an electrode to touch them without a little flinching, and only a very mild, constant current passed from these to the internal malleolus could be borne. The temperature of the foot was not above normal. The patellar tendon reflex and tendo-Achillis reflex were exaggerated in both extremities, but much more so in the left than in the right leg. No effort at eliciting the reflex phenomena was attempted till after the hyperalgesia and hyperæsthesia had disappeared from the feet.

Without fever and without evident organic lesion of the heart, the heart beats continued throughout two months of his sickness at 120 per minute, except when modified by treatment. A tenderness, on pressure, at the sacrum persisted after the pain had left his foot.

The patient was much emaciated and very feeble when he came under our observation on September 23. He had lost much of his hair and his nails were changed to a dirty brown color. The movements of the upper and lower extremities were tremulous and choreic on attempting exertion. The paroxysms of pain in the feet recurred every few minutes without exciting cause, but a touch or draft of air, or putting the feet pendant, would start the pain immediately. The pain was often in the two feet at the same time, but most frequently alternated. The most comfortable attitude the patient could assume was to flex the thigh on the abdomen, and to grasp the leg below the knee with locked hands, while lying recumbent or holding his knees up in that way.

Under a treatment which consisted mainly of rest, a liberal diet, judicious galvanism, belladonna, aconite, gelsemium, quinine, arsenic and the bromide and muriate of ammonia, with occasional doses of morphia and chloral, the patient became practically convalescent of the neuritis by the 7th of October, the pain paroxysms having ceased to recur, no tarsal or plantar pain to touch, and but a little tenderness to firm pressure remains, October 12, over the sciatic notch. The patient has increased a good deal in flesh, rests well at night without hypnotic aid, and takes a nap or two during every day, while active treatment for the neuralgia is almost entirely withdrawn. But there remains the irritable heart, a lame step in walking, to accommodate the left side, and some incomplete rheumatic and malarial symptoms have appeared. October 24, the patient was sent home for a few days, free from pain, but still walking somewhat lame, and with a pulse of 120 per minute.

On October 29, the patient returned for treatment, without pain, but still with a lame step and an abnormal heart-beat, and remained under treatment till the 4th of November, when he was discharged convalescent, with a slightly lame step, no pain, and a heart-beat when sitting, of 84 per minute. There was no history of venereal disease in this case.

A case came under my care last June not preceded by any pronounced form of fever, but by a general *malaise*, irritable heart and a masked intermittent, in which there was only restless sleep and night sweats, in the person of an old lady of 65 years, who has had a chronic stationary ovarian tumor for over thirty years, which Dr. Jesse Judkins, of Cincinnati, thought it not advisable to operate upon. This trouble was followed, on the 1st of July, with a dysentery which lasted till about the middle of September.

Dr. Elsworth Smith, of this city, succeeded me in charge of this case on the 24th of July (when I took my vacation), and the patient, by our joint advice, went East, to the sea shore. After her return, in September, the foot trouble reappeared, and was

much like one of Wier Mitchell's typical cases of erythemomegalalgia. The skin in this case was red over a certain area of the sole of the foot and the great toe, and the two adjoining lesser toes, and peeled off. The nails were not discolored, but the ball and tips of the great and adjoining toes were intensely painful. An ointment of acetate of lead and belladonna was however well borne, and this and quinine and belladonna internally gave relief. The patient is now (November 25) quite well for one of her age and other local infirmities, and has gained in flesh, appetite, sleep and strength.

There was no persisting accelerated heart action in this case. While I regard these cases as all belonging to the same category of peripheral nerve irritability from inflammatory states of the nerves or their sheaths, or conditions approximating inflammation and due to blood states, as other forms of neural pain and nerve-sheath inflammation after fevers, they may also precede, as well as follow poison or depravity of blood, and the effect is not always, nor do I believe ever, altogether spent on the peripheral nerves, though it is there usually most apparent. In the case first above described, there was pain in the sciatic on pressure, near its point of emergence, from the pelvis under the pyriformis muscle, and lower down between the trochanter major and the ischium. There was also some sense of constriction complained of about the waist, even after the pain had left the foot, so that what Ross says of this disease, viz., that it is sometimes progressive, and in its later stages may be associated with evidences of spinal disease, such as girdle pains and partial paralysis, muscular atrophy is not a future impossibility with our patient, though we shall endeavor by judicious management of the case, if permitted, to avoid so dire a result.

The efforts of pathologists have, of late, been in the direction of establishing them as febrile sequelæ, as they most usually, but not invariably are, as MM. Pitrès and Vaillard (*Revue de Médecine*, December 10, 1886,) have lately shown in regard to post-typhoid neuritis and in regard to post-neuritis tuberculosa. They belong to the same category as those extremely sensitive states of teeth, and nails and hair roots which sometimes are seen to precede, but more often to follow, certain states of depravity—or poison of blood; the clinical cachæmias and toxhæmias.

Neuritis plantaris, as I have observed it, is seldom displayed in the constitutionally neuralgic, like sciatica and tic-douloureux, and singularly does not suddenly migrate from one branch to another of its great nerve root, the posterior tibial, or of the popliteal bifurcations of the great sciatic, in imitation of neuralgia trifacialis and other forms of transitional neuralgia. It does not even alternately pass to and from the external and internal plantar, which bifurcate from the posterior tibial, but is exclusively confined in all the cases I have seen to the digital branches of the internal plantar, extending no further outward than the distribution of the nerve to the inner aspect of the ball of the fourth toe, and the toes all seem to be more or less conjointly rather than alternately painful, as is usually the case in true neuralgia of central origin of the common terminal branches of a certain nerve-trunk. This gives it the character of peripheral neuritis rather than of simple neuralgia. But why neuritis plantaris should select the internal plantar nerve about the point of its bifurcation, and at its distribution in the toes is only conjectural. It may be due to the fact, that it is larger than the external, has more to do in the movements of the foot and toes, and is more pressed upon in standing and walking than its outside neural neighbor.

Ross, we think, has justly criticised the name erythemomegalalgia, given by Mitchell to these cases, "inasmuch as the vasomotor disorders are preceded and accompanied by severe paroxysms of pain," though the name given by Mitchell is certainly very descriptive of his own cases, as they all had erythema as well as intense pain, and the flushing over the painful area is quite characteristic in many cases, though by no means in all.

MEDICAL PROGRESS.

HYDATID CYST OF THE SCROTUM.—A case of hydatid of the scrotum came under the care of MR. PHILIP E. MUSKETT in the Sydney Hospital during the course of last summer, and as this is an example of a very rare condition a brief note will be of interest. The patient, aged 25, had been in Australia since he was 3 years old, and in a sheep district where the water was very bad for four years before the swelling appeared; this was first noticed eight years before he came under treatment. During that time it had been tapped twice, and on the second occasion also injected with iodine. When admitted to the hospital "there was an intra-scrotal tumor, about the size of a large emu egg, on the right side. It was smooth in outline and its general contour nearly oval. The tumor was tense and dull on percussion, but gave to the fingers on palpation the sensation of fluid within. There was no impulse on coughing, and it was irreducible. The position of the testicle at its posterior part was made out by the presence of testicular sensation. The cord could not be clearly defined at the upper portion of the swelling. Light was transmitted by the ordinary manner of procedure, and, finally, the history had been that of an eight years' growth: painless except from its mere weight." The cyst was tapped on the day following admission, and about an ounce of "serous-looking fluid" of pale yellowish tinge evacuated. Suppuration followed this tapping, and thirteen days later, about 6 ounces of purulent fluid were drawn off. After this pus drained away from the puncture for eleven days, than a hydatid sac partly forced its way out and was partly extracted through this opening. The sac was greyish in color, translucent, and elastic, and its sunken condition would about fill an egg-cup. The swelling gradually subsided, the sinus closed, and the patient left cured.—*Lancet*, Jan. 29, 1887.

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PUBLISHED WEEKLY.

The Editor of this Journal would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, MARCH 12, 1887.

THE TREATMENT OF PUERPERAL CONVULSIONS.

Within the past six months several papers on the treatment of puerperal convulsions have appeared in different journals, and among the various measures and remedies suggested and praised for treating this affection, we have seen no mention of one of the most powerful means for controlling these convulsions—hypodermatic injections of morphine. It is now almost twenty years since Professor Loomis began the use of morphine subcutaneously to control uræmic convulsions. We need not stop here to discuss the pathology of puerperal convulsions, and to inquire as to the difference between them and the convulsions of ordinary nephritis. Loomis makes no distinction between them when he writes: "From the histories of quite a large number of puerperal and non puerperal cases of acute uræmia, in which morphine was successfully used, I have reached the following conclusions: *First.* That morphine can be administered hypodermically to some, if not to all, patients with acute uræmia, without endangering life. *Second.* That the almost uniform effect of morphine so administered is first to arrest muscular spasms by counteracting the effect of the uræmic poison on the nerve-centres; second, to establish profuse diaphoresis; third, to facilitate the action of cathartics, and diuretics, especially the diuretic action of digitalis." We know that in puerperal convulsions, as in uræmic convulsions of nephritis, the functions of elimination are held in check; and under such circumstances morphine may be administered with the view of "holding the patient until the normal eliminating process shall be re established."

In a recent communication Dr. Joseph D. Eggleston, of Worsham, Va., writes: "I have used morphine in these cases for sixteen years, and I began its use on account of its antispasmodic effect. I was afraid of chloroform because it caused too much coma, and had tried chloral, veratrum viride, and other drugs in place of venesection, which reduced the patient so much that I was anxious to find something that would lessen the use of the lancet. By using morphine I found that I could dispense with chloroform altogether, but not with chloral, the effect of which was more lasting, and the drug could be continued indefinitely without injury to the patient. I have not had a case of puerperal convulsions for five years; and this I attribute to the use of bitartrate of potash as soon as there is the slightest swelling of the feet or legs of a pregnant woman. I have yet to find one show the slightest symptom of uræmia after beginning its use, two teaspoonsful every morning, in water. If, in spite of this, amaurosis occur, I order chloral in 10 grain doses three to six times a day, with very decided effect. In an experience of thirty-six years (thirty cases with thirty recoveries) I have found nothing equal to morphine and chloral, by which we can treat the cases without the loss of blood, and consequently with better and easier after-recovery. Morphine does not increase coma when used during convulsions; it is easy to see whether the pupils are inordinately contracted. So far from the coma being increased it will be found that in thirty minutes, at farthest, it is lessened, and in many cases the patient fairly on the road to recovery. Should I have a case of puerperal convulsions today, the first thing I would do would be to use a commanding dose of morphine and atropia hypodermatically, and give bromidia or chloral; and if this did not act promptly I would bleed. One would be surprised to see the effect of morphine in these cases—as if bringing the dead to life. It does not stupefy the patients, but renders them brighter."

Leading obstetricians seem to be agreed that chloroform is the first remedy in puerperal convulsions, some placing it above all others as a continuous remedy, others using it to control convulsions until other drugs begin to act. While formerly it was recommended that it be used in full anæsthetic doses, so as to paralyze the motor centres, it seems to be agreed, on this side the Atlantic at least, that it should not be pushed except when labor is nearly at a close; except in this case "it is advisable to restrict the chloroform to the pains, and to the restlessness which is often the preliminary to a fresh seizure." It seems to be more widely and exclusively used in

England than in this country. From the excellent work of Professor Lusk one would gain the impression that he first bleeds, then gives chloroform, and afterwards uses such remedies as chloral and bromide of potassium; but it is difficult to see the necessity for both venesection and chloroform. Most of those who advocate the use of morphine advise that it be given in small doses, though there seems to be no good reason for this; but at the same time the dose recommended by Clark, a grain and a half, seems unnecessarily and dangerously large. Smith, of Melbourne, who reports that no case of puerperal convulsions has died in the Melbourne Hospital since the introduction of the morphine treatment, gives ¼ to ⅓ of a grain hypodermatically, and says that it should not be combined with atropia; though why atropia should be left out does not appear (quoted by Parvin). This injection is repeated in a few hours, but with a smaller quantity of morphine, if the patient has another fit. Nitrite of amyl has given signally good results in these cases, but alarming hæmorrhage may ensue if given during labor. Pilocarpine has been highly recommended by a few, but the results do not seem to be very encouraging, and its action on the heart seems to contra-indicate it. Nitro-glycerine is said to be promising as a resource; but there does not seem to be very much promise in a drug which must be given in one minim doses every hour to get an effect when time is all important.

In conclusion, it seems that too little attention has been paid to the morphine treatment of these cases; and this seems to be due to the strong prejudice which has existed against the use of opiates in general cases of renal disease. It may be said that a patient is much more manageable, so far as giving other drugs is concerned, when under the influence of morphine than while under chloroform. And while chloral cannot be readily dispensed with in these cases, a patient is brought under the influence of a subcutaneous injection of morphine much sooner than under the influence of a rectal injection of chloral; and if we wish to give chloroform until the narcotic takes effect, it is easily seen that a considerable time of chloroform inhalation is cut off by using morphine. Veratrum viride has also been endorsed as an efficient remedy in these cases; though such recommendation is by no means new. Dr. Eggleston writes that twenty-five years ago, when its claims were first put forth, it was used in one case (post-partum) to the amount of 1 ounce of Norwood's tincture in three hours, but without the slightest effect. Besides its uncertainty, its safety in large and repeated doses is by no means established. It seems scarcely necessary to say that when the convulsions have been controlled, even temporarily, "every effort should be made to re-establish the functions of elimination. Digitalis is especially serviceable throughout. Active cathartics should be given without hesitation, as these are usually very efficient aids, not only on account of their eliminative action, but also because they lessen the congestion of the nerve centres," (Purdy). "As a subsidiary measure the lower bowel should be cleared out with an enema, and a cathartic (a drop of croton-oil, or calomel and jalap in case the patient is able to swallow) should be given by the mouth" (Lusk). Croton-oil is especially valuable, as it may be placed on the back of the tongue when the patient cannot swallow.

LEGAL REGULATION OF MEDICAL PRACTICE.

This is the season of the year when the Legislatures of many States are in session, and not a few of them are considering Bills, or amendments to laws already existing, having for their object the regulation of the practice of medicine. Copies of Bills or Acts have been sent to us from several States, which had been introduced into one or both houses of their respective Legislatures, but in only one instance had they been acted upon and acquired the force of law. While these numerous attempts at medical legislation show a popular desire, both in and out of the profession, to protect the people from medical charlatanism and ignorance, they show a very general failure to comprehend either the true basis for legislation, or the skill to adjust the details for obtaining the best results. Hence we invite the attention of all parties interested to the following simple propositions: 1. The only legitimate ground on which the law making power of a State or nation can presume to regulate, or in any way to interfere with, the practice of medicine, is the presumed necessity of protecting the people from being imposed upon and injured, by impostors and ignorant practitioners. 2. To accomplish this purpose the law-making power must first clearly define, in unequivocal terms, the minimum amount of education, both general and medical, necessary to qualify a person to practice medicine; and, second, provide a reliable executive tribunal or board for determining in a uniform manner when each person proposing to commence practice has actually attained the standard of education specified in the law. The same standard of qualification and the same executive board must apply to all parties proposing to enter the profession.

For the law making or political power of the State

to attempt to recognize medical theories or discriminate between so-called schools of medicine, or in any way influence the private judgment of the practitioner, is to commit a radical error, as untenable as it would be to enact laws discriminating between the several sects or denominations in religion. Not only should there be one standard of requirements for all, but there should also be one and only one standard of eligibility for appointment on the executive or examining board, on which is to devolve the execution of the law. To proscribe one class of practitioners simply because they may be teachers in medicine, and to dictate that a certain number shall be selected professing one pretended theory of medicine and a certain number professing another theory, is a species of class legislation of the most odious character, and invariably injurious in its results. It would be entirely proper and consistent for the law to specify, for the guidance of the appointing power, that no person shall be eligible for appointment as member of the executive Board whose general and professional education has not been fully equal to the standard of requirements specified in the law, and who had not been a practitioner, and a citizen of good reputation, at least five years in the State. With this plain and fair rule of eligibility for the profession, and the appointing power vested in the Governor, with the right of confirmation in the Senate, there would be no danger of having the State Board made up of inferior men or mere theorists.

THE BENEFITS OF MOUNTAIN-CLIMBING.

As more and more attention seems to be paid each year to the climatic treatment of disease, it seems well to mention the increased benefit which the patient may receive by climbing gradual and steep ascents while seeking a renewal of health in suitable climates. Jaccoud has called attention to this in his admirable work on the "Curability and Treatment of Pulmonary Phthisis:" "Walking is not the only form of exercise which should be taken; if the character of the country is suitable, constant ascents, proportionate to the age and strength of the patient, should be prescribed. These ascents should be made with slow and measured steps, so as to occasion no fatigue to the respiratory organs, and there should be occasional rests on the way. If it is wished to expand the lungs as far as can be done, the person should be advised while climbing to place a stick between the arms, which are thrown back, and the dorsal region of the back. In this position the transverse diameter of the lower part of the chest is completely expanded, the fixed position of the upper limbs causes the whole action of the auxiliary inspiratory muscles to be combined in raising the chest, and the upper part of the lungs, whose expansion is always measured by that of the chest, dilates as far as possible at each inspiration, which is necessarily exaggerated by the effect of the ascent. When carried on in this way, such a plan constitutes a true and useful kind of pulmonary exercise."

But phthisis is by no means the only affection which may be benefited by judicious mountain exercise and climbing. In the *New York Medical Journal*, of February 26, Dr. L. Barkan, of Brooklyn, gives some very interesting information on this subject—interesting both on account of his remarks as to the value of pure air in the treatment of disease, and on account of the records of cases. The best inhalation apparatus, baths, and medicaments, he says, are of but temporary value if no compensation is made for the loss of vitality and of muscular tone, especially that of the heart and vessels; if the blood-stasis in the glands and other organs does not yield to an increased flow of blood in the arteries and veins; if the thinned blood does not become thicker and more rich in albumin; if the accumulating carbonic acid is not expelled by a more plentiful supply of oxygen; if the fat deposited in the body is not more rapidly oxidized; and if the kidneys are not made to act more efficiently. But all these effects are produced more certainly and more generally by mountain climbing than in any other way. Those who have had any opportunities for observation must know that after several weeks spent in mountain excursions the condition of the patient is changed, and radically, for the better—mentally and physically.

The cases reported by Dr. Barkan may be briefly given as follows: Man of 40 years, weight 230 pounds, circumference of waist 120 ctm., of chest 116 ctm. The first walk caused him to pant for breath so that he was almost obliged to stop every three minutes. On the second day the breathing was easier, and he had to stop every five minutes. The secretions were increased in amount, and the torpid condition of the bowels was corrected. The walk was lengthened each day. At the end of a month climbing caused but slight acceleration of respiration, which was inaudible, he could walk for a quarter of an hour without stopping, and he could climb for four hours a day. The cardiac contractions were full and strong, and he had lost the feeling of oppression and dyspnœa. At the end his weight was 208, circumference of waist 107 ctm., and of chest 121 ctm. The second was an old case of neu-

ralgia of the left facial nerve, resulting in numbness of the affected cheek. After a three weeks' excursion the numbness entirely disappeared, and has not returned. The third patient had suffered for thirteen years with rheumatism. At the end of two weeks of treatment he could climb hills, and after doing this for a week and a half his rheumatism had permanently disappeared. The fourth patient was plethoric and hypochondriacal, and had hæmorrhoids. Improvement was noticeable at the end of two weeks: after four weeks the hæmorrhoids had entirely disappeared. His weight was reduced from 211 to 185 pounds; his waist measure from 108 to 98 ctm., and his chest measure increased from 104 to 109 ctm. The fifth patient had chronic gastric catarrh. There was noticeable improvement after one week, and after three weeks the stomach was in good condition. A bronchial catarrh, which had given trouble, was much improved the first day, and disappeared on the third day. He gained fifteen pounds during his trip. In a sixth case psoriasis disappeared permanently in twenty-four days. In another case a chlorotic girl of 19, who had amenorrhœa, improved markedly in two weeks. In still another case a weak, hysterical woman, who had not menstruated for two years, was much stronger, not hysterical, and menstruated, after eight weeks of this exercise.

CRIMINAL ABORTIONS.

On this subject a correspondent makes the following suggestion: "When we shall have passed a law binding all physicians, upon their honor, to make public the desire of any person who may ask the performance of an abortion, we can then hope to check, in a measure, the wholesale murder of the unborn. Secrecy in regard to patients who come to us for advice should be sacredly observed, but the audacious insult of requesting an honorable physician to procure an abortion should be publicly resented by openly reporting the party."

It is doubtful whether an attempt to carry the suggestion of our correspondent into practice would prove either an efficient remedy for the evil or an agreeable one for the physician. Only a small proportion of those who desire to have a pregnancy aborted go to a physician and, admitting the pregnancy, directly ask him to procure an abortion. On the contrary, three-fourths of the whole number simply acknowledge that their menstrual periods have ceased to recur, and they plead for something to restore them, and render every excuse they can think of before acknowledging the *possibility* of pregnancy. A considerable number of this class, when positively assured that they are pregnant by the physician, and faithfully warned of the dangers, physical and moral, liable to result from any and all methods of producing an abortion, at once abandon all further efforts in that direction. For the physician to publish such cases would be manifestly unjust; and certainly there should be no law compelling him to do so. But admitting that the other parties persist in desiring the performance of the abortion, and the physician not only refuses to do it, but actually makes public their application. will it deter a single one of them from seeking out the professional abortionist who, for the stipulated fee, will proceed with his murderous work just as readily as though no publication had been made. The proposed law to him would be of no consequence, except in making all parties desiring abortions more cautious to seek him first instead of going primarily to the regular physician. Again, very few of those who apply to physicians for aid in effecting an abortion take a reliable *witness* with them, or consult the physician in the presence of others, and should the physician, under such a law as proposed, make public the application of Miss A. or Mrs. B., and a libel suit should follow, by whom is he to prove the truth of his public statement? We fear such a law would prove more dangerous to the honorable physician, than helpful to the cause of public morals and humanity.

OFFICIAL REPRESENTATIVES TO THE NINTH INTERNATIONAL MEDICAL CONGRESS.—It was announced several weeks since that Dr. Leopold Servais, of Antwerp, had been appointed by the Belgian Government as representative to the Congress in Washington. More recently we learn that Deputy Surgeon-General Jeffrey A. Marsten, M.D., of the British Army, has been designated a representative by his Government; and the Government of France, through the Academy of Medicine, has designated as representatives Drs. Charpentier, Dujardin Beaumetz, Léon Le Fort, Trélat and Vallin. From all directions, at home and abroad, the indications of a very large and interesting Congress are of the most gratifying character.

CONTRIBUTORS TO AND CORRESPONDENTS OF THE JOURNAL are earnestly requested to remember that brevity of style and conciseness of statement facilitate early publication. Prolixity is a great bar to publication, however interesting or valuable the communication may be.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, February 7, 1887.

THE PRESIDENT, EDMUND J. DOERING, M.D., IN THE CHAIR.

DR. W. E. QUINE, Chairman of the Committee appointed to convey to N. S. Davis, M.D., LL.D., a formal expression of the Society's estimate of his labors and character, prefaced the presentation of the report, by a few well chosen words of congratulation to Dr. Davis on his arrival at the fiftieth anniversary of the date on which he received his diploma to practice medicine. The report of the Committee, which had been engrossed on parchment, was then read and presented to Dr. Davis, who responded in a feeling manner.

DR. J. A. ROBISON read a paper on

THE CLIMATIC TREATMENT OF DISEASE.

(See page 289.)

DR. F. E. WAXHAM exhibited

MODIFIED INTUBATION INSTRUMENTS.

(See page 291.)

DR. JOHN BARTLETT said: Dr. Waxham has given us the position of the O'Dwyer tube when *in situ*, indicating that the beveled facet on its upper extremity should present upwards and forwards. Now by several practitioners in this city the tube has been introduced contrariwise; that is with the bevel of the flange looking upwards and forwards. And this position of the tube, it is maintained by those who prefer it, has an advantage, namely, that when it is so placed, the patient's ability to swallow is appreciably greater than when it is inserted as intended by Dr. O'Dwyer. The anatomist, Professor Hoadley, prefers this reversed position. He has now introduced the tube in this manner in eight cases, and in seven of these, the patients directly after the operation, could swallow fluids without the least difficulty. Dr. Hoadley maintains that the flange of the tube as placed by him deeply within the vestibule of the larynx, in no wise interferes with the functions of the epiglottis, or the aryepiglottic folds. Confusion in regard to the proper position of the tube, has arisen here from earlier cuts of the instruments accompanying some of the cases; these erroneously represented the tube placed with its longer margin forward. I desire to say a word in regard to feeding these patients. There are reasons for believing, that by the use of a French condé catheter of proper size, introduced some distance into the gullet through the nasal cavity, thorough alimentation could be secured without distressing the child, or, a suitable stomach tube, might be introduced through a stomach tube director without greatly distressing the patient. Stress might be properly laid upon the fact that pultaceous food, as bread soaked in milk, is swallowed more readily than water, or fluid nutriment.

DR. CHARLES WARRINGTON EARLE said: I think Dr. Waxham, who is certainly the most successful in this operation, should warn the general practitioner who has had little experience, against trying this operation without some one standing at his elbow to show him just how to perform it. There are few who do it well, and I know of excellent surgeons in this city who may be trusted in everything else, but who have tried to do this operation and signally failed. And, although Dr. Waxham talks as if it was very easy, I think no person should try the operation for the first time without having some one by him who is particularly skilled. I remember very well trying to perform the operation, and I had Dr. Waxham right there. I tried my best to introduce the tube but could not, and Dr. Waxham took the instrument out of my hands and did it in two seconds. I think he should not try to make it appear so easy.

DR. WAXHAM, in closing the discussion, said: I would say a few words in regard to feeding patients. I think one of the secrets of success is proper feeding, and the attending physician should superintend the feeding of the child. He may tell the people to feed it *bread* and milk, or semi-solids, and if he investigates the matter he will find they are giving it half a teaspoon of milk with a little bread, and the milk trickles into the trachea and the bread is rejected. If they are told to make a custard they make it so soft and fluid that it will *trickle* into the trachea. It is very important that the physician should superintend the feeding personally. It is well not to give the child liquids, a small piece of ice placed in a piece of cloth held in the mouth will quench the thirst, and it should not be allowed to swallow for several hours, when it will swallow very much better than if the feeding is attempted at once. I have always made it a practice to introduce the tube with the bevelled portion directed forwards and the projecting shoulder backwards, and I think this has been one reason of my success. To me it seems a reasonable method of placing the tube because, if the higher portion is directed backwards the epiglottis can more perfectly close over the aperture of the tube than if the high portion is introduced forwards. Little or no difficulty is ordinarily experienced by the expert in removing the tube. It has been removed over and over again in two seconds, and yet occasionally, if the tube becomes turned in the larynx, or if from the small size of the tube it sinks to the bottom of the larynx, it becomes difficult even for the expert to extract the tube, and in such a case after two or three careful attempts, we should give the child an anæsthetic so as to have it entirely quiet while the extractor is passed into the tube. In extracting the tube it is best to place the finger over the base of the tongue, when the child will gag and the tube will rise to the finger and it can be caught with the extractor.

Stated Meeting, February 21, 1887.

THE PRESIDENT IN THE CHAIR.

The discussion of Dr. J. A. ROBISON'S paper on

CLIMATIC TREATMENT OF DISEASE

being in order,

DR. JOSEPH P. ROSS said: I am called upon to open the discussion of the treatment by climate of consumption, one of the most frequent and fatal diseases that afflict our race. Statisticians tell us that more than three million persons die annually of this disease. Dr. G. B. Wood, in his "Practice of Medicine," states that north of the tropics one-sixth of all deaths are caused by this disease. And upon consulting Zeimssen I find that the author of the article on consumption makes the statement that two-sevenths of all the deaths in the world are caused by pulmonary tuberculosis. Since this disease is so general, and since treatment by medicine does not accomplish as much as hygiene, which includes climatic treatment, it is very important that we discuss the subject.

In the excellent paper read by Dr. Robison at the last meeting, he quoted the opinions of three leading medical men with reference to the kind of climate which is appropriate for the treatment of consumption, and I think their views with reference to the appropriate climate, which were adopted in the paper, are correct. From my study and observation of the effects of various climates upon tubercular patients, I believe that, although you cannot say any particular climate is suitable for every case, you can say that for cases in general the air should be pure and dry, should be neither too hot or cold, should not be variable, and should be somewhat rarefied; for instance, such an air as would exist at an altitude of from 1,000 to 3,000 feet above the sea level, and lastly, the air should be invigorating, because of its containing an additional element, probably ozone. It may be that this invigorating quality is due to an *electrical* condition of the air, but I think it is more likely due to ozone. I waive the discussion of each of these elements appropriate to a good atmosphere, but will speak more particularly of different localities that are known as health resorts, and will state what facts my experience and study has taught me concerning these localities.

In the first place, I will briefly refer to Colorado. Twenty years ago I began the study of the Colorado climate. You will remember that at that time the eyes of the medical profession were turned to this region as offering the best promises for a good climate for tubercular patients. I thought that in Colorado we have a climate where there is a pure, bracing air, with an altitude high enough to secure rarefaction of the air sufficient to invigorate the respiratory functions. I sent a large number of patients there, and the following is an almost typical history of the course many of these cases took: Mrs. H. had been ailing six weeks. Her symptoms were cough, profuse expectoration, fever and night sweats. Physical exploration revealed a consolidation of a limited area in the apex of the right lung, supposed to be tubercular. This exudation did not extend much below the lower border of the second rib. Being in affluent circumstances, she was sent to Denver, where she was surrounded by every comfort and luxury. She embraced every opportunity to improve her health. In two months she returned to Chicago, her strength having improved, and having gained eleven pounds in weight. To all outward appearance her recovery seemed assured, but on physical exploration of her lungs I was surprised to find that the area of consolidation had extended until it involved almost the half of the right lung. She went to Denver again, but did not improve much. She remained there about two months and returned with the exudation rapidly breaking down, and only lived two or three weeks after her return home. I have observed this fact: that while the patients seem to improve in their general health, the exudate increases rapidly, and if softening occurs it takes place also very rapidly. This is probably due to the high altitude. I have also observed that in the high altitudes patients who have a tendency toward hæmorrhages are apt to be unfavorably affected in this way. Therefore, in the later stages of tuberculosis, the high mountains of Colorado and New Mexico are objectionable. For this reason I have carefully selected all cases that I have advised to go to Denver, Colorado Springs, Pueblo, Raton Pass, Las Vegas, Santa Fè and Albuquerque.

I next selected San Antonio, Texas, as a health resort, and sent patients there for a few winters. During the first winter some seemed to improve, but a large number of them complained that the sudden cold winds from the north, or northers, as they are called, caused severe attacks of bronchitis or pneumonia. In the spring or summer there is a great deal of malaria. But barring the northers and malaria, a great many cases do very well there, and during the months of December and January, I believe it is a very good climate for consumptives. But during the summer months the heat has too depressing an influence on the patients. While I believe that in January the patients were a little better in San Antonio than in Chicago, still they did so poorly that I stopped sending any patients to Texas.

I sent many to California, and, all things considered, I think the best climate and opportunities for treating this disease are found in California. I sent a brother, a son, and a servant boy with advanced consumption to Long Valley, California, all of whom recovered. I had quite a number of patients who recovered in the valley north of Virginia City, just below the Summit Range. And a number of my patients regained their health on the other side of the range, in the foot hills of the Sacramento valley. With reference to Southern California, probably for two months of the year it would be desirable to send patients down to Los Angeles, Riverside or San Diego, but taking that climate all the year around it is not the place, because the air does not contain something that should make it essentially invigorating; it is not light enough, and seems to lack ozone. I think patients affected with ordinary catarrh will do well there, but consumptive patients do not improve in Southern California all the year round. If one could live in the southern climate for two months in the year, and then go up into the Sacramento valley, where you can find almost any altitude, I think probably it would then be the best climate for cases of consumption in general on the continent. One objection to sending patients there is the distance from Chicago.

Afterwards I made a study of the Gulf coast and Florida, and after going all over and investigating these regions, but Florida more especially, I hold the same view in regard to that climate that I obtained when I was there last year. I visited Palatka, on the St. Johns River, and called on Judge B. and asked him what kind of a climate for consumption they have in Florida. "Well," he said, "I will express my views candidly. If you want to send your consumptive patients down from Chicago to have them put in the ground, send them along." I think the climate of Florida is a failure for the treatment of consumption, for this reason: patients go there having a cough, being debilitated by disease, and the air is balmy, and they say, what a beautiful air. They do not cough so much, but they sit around and take no exercise, for there is nothing to cause them to take active exercise. There is something lacking in the air; it does not brace one up, and I never saw a patient there that improved the least from day to day, The atmosphere is warm and moist, and very depressing, while malaria abounds.

With reference to the regions mentioned by Dr. Robison, I have investigated the climate of the mountains of Tennessee, Georgia and North Carolina, and have been to the places mentioned in the paper: Asheville, N. C., Marietta, Ga., and Chattanooga, Tenn., and I fully agree with the remarks made by the author. I think the climate of these regions is suitable for the treatment of consumption. I think it is well for us to consider the favorable features of this mountainous region of Tennessee, Georgia and North Carolina, which is called, and I think correctly, the Switzerland of America. In the first place, let us contrast the climate of that region with ours at the time of year when our climate is bad. It is in the spring from the January thaw until June that our climate is bad; the latter part of winter and spring. Now, it is a fact that at an altitude of 6,000 feet above the sea level, as at Denver and Colorado Springs, the air is too cold, and when we have bad weather here you will find bad weather in Colorado, extending from the January thaw until near June. During these months when our climate is bad, you consider the question of sending patients away from Chicago. In Great Britain and the north of Europe they consider that the bad time of the year is from January to June, and they send patients down where the Alps dip into the Mediterranean Sea and where they find the climate mild, about the same conditions of climate that we have down South. All the rest of the year we have a good climate; in fall, summer and early winter, the Chicago climate is not bad, it is only in the spring, and then you want to consider where you should send your patients. You might send them to Texas, and it may be that in January they might be a little better there, but for the whole time it does not seem to me they have a climate with which they succeed in curing patients. You might send them to California, but if you do not want to send them so far away, the other localities mentioned in this paper are good places. I endorse what was said about the favorable climate in the South. I have spent spring, summer and winter months down there, and I find that at an altitude of from 2,000 to 3,000 feet above the sea level you have a good climate, and it is near home, and so convenient that if anything should happen friends can go to the patient, or he can return home, in a few hours, which is another reason why we should think favorably of this latitude. During the past fifteen years I have had considerable experience in sending patients to these regions, and they return as much improved as I ever had them return from any other point on the continent. I have had patients go to Chattanooga when they were not able to climb Lookout Mountain, and they would come back wonderfully improved. I felt deep regret four years ago at sending a lady down there, for I did not believe she would ever return alive. I knew she could not live here three weeks, having all the symptoms of advanced tubercular trouble, with almost complete consolidation of the lung, but in four months she came back almost cured, and to-day I met her on the street, and she is to all appearances robust and healthy. The question comes up with reference to the most desirable points. Asheville is in North Carolina, and it takes a day and a half to go there; Marietta takes thirty-two or thirty-three hours to reach; while it takes twenty-one hours to go to Chattanooga. I think, as Chattanooga is a little nearer home, it would be desirable to try that point, and if that does not suit the patient he can move on to Marietta. On Lookout Mountain the scenery is perfectly grand and beautiful, and lends an interest to a residence on the mountain. The scenery is varied from every point of observation. As they have a cable railroad on the mountain, if you get tired you can run down into Chattanooga, a town of 30,000 inhabitants (and in a few years they will have 50,000), in a few minutes.

I have no personal interest in the matter, but I wish to say that Mr. and Mrs. Carter, of Chicago, have rented a most beautiful home on Lookout Mountain and will run it as a health resort. They opened our County Hospital in this city twenty-five years ago and were managing it beautifully until the war came, and then it was taken away from them; but they demonstrated their ability to manage a hospital. They have accommodations for entertaining about 200 guests, and I think it is the best place to regain health I have ever known. If the patients should tire of Lookout Mountain House, kept by Mr. Carter, they can go to Marietta in a few hours, and here is a pleasant health resort. I never passed a more pleasant week than at the Whitlock House in Marietta. Mr. and Mrs. Whitlock are the most genial host and hostess I ever met. They look carefully after the interests of their guests and provide them with every comfort.

Now, allow me to epitomize my rambling remarks. My reasons for recommending the South as a place to send consumptives are:

1. When the climate in Chicago is unsuited for consumptive patients, the climate is mild and favorable in the South.

2. The nearness of Chattanooga, Marietta and Asheville to Chicago and the North. The trip can be made in a few hours.

3. The results of a limited experience have convinced me that my patients do as well, if not better, at these points than at any other.

In conclusion, I wish to add that the reason I prefer Lookout Mountain to the other points is on account of the extent and variety of the scenery, and its proximity to a city, and greater nearness to Chicago.

Dr. J. J. M. Angear said: I endorse nearly all that Prof. Ross has said and most of the paper. There are a few points in the paper that I think might be amplified and supplemented profitably. The author speaks of home comforts, pleasing scenery and congenial society, and these three things, I think, demand a good deal of our attention. We are all aware of the fact that there is some truth in the old saying: "Laugh and get fat." It is an impossibility for any one to do well who is constantly under a cloud; it has a depressing influence upon the mind, I care not how good the climate. And here comes one of the greatest difficulties which we have to contend against in all diseases. Let us imagine for a moment the head of a dependent family who fears consumption. The physician advises him to leave home for a more salubrious climate, and under the pressure of circumstances he takes his departure. It may be that he begins to think as soon as he has bought his ticket: there is $25 or $100 that my children will need. This is a big load. He thinks he is going to be gone for a month or two, and he estimates what his services would be worth to his family, and if anything should happen to him his widow will need it; and this is another big load. We can readily see that it is impossible for his frail frame to bear up under these burdens. It is probable that there would be more cheerfulness at home than away among strangers, no matter how desirable these places may seem. These things must be taken into consideration. I have thought, for a number of years, that the benefit of our watering places was not from the water, but because the patient leaves home, leaves business cares and has a gay, good time. He goes to Saratoga with plenty of money in his pocket, enjoys the fine music, enters into the gaieties of the ball and the festivities of the occasion, light as a feather, buoyant as the mountain air. Sadness of heart has melted away, that patient can "laugh and get fat." There is something here for us to study, the tranquility and peace of mind so that nutrition can go on undisturbed.

The idea is advanced in the paper that in good environments bacteria cannot thrive. If they cannot thrive they are not able to do their mischief. There may be something in this which we do not understand. We do not believe that laughter will ever get rid of a tapeworm; we do not believe that cheerful society and good music will cast out or put a check upon the ravages of trichina, but we are compelled by force of circumstances to acknowledge the truthfulness of the assertion that good environments will check, if not destroy, the influence of microbes, and if we are convinced that microbes are really the cause of tuberculosis, then we want to place the patient in such an environment, which will check, if not destroy their ravages. It may be wise for us to select pure air, the right temperature, and sunshine; but unless the patient can carry contentment with him, sunshine in his soul, it would be better for him to stay at home; and unless he has abundant means so that he may not feel pinched, and can enter into the gaieties of the place, he had better stay at home.

Dr. J. G. Kiernan said: The point raised by Dr. Angear, as to the mental condition having an influence on the progress of the disease, is valid as to principle, but he has ignored the mental peculiarities of the consumptive patient. Hope has been known as a characteristic for a long time, but the suspicious element is a less known and as frequent characteristic. In removing a patient who has tuberculosis from the surroundings of his home we are doing the best possible for that patient, from a moral standpoint.

Dr. R. G. Bogue said: Some years ago it was my fortune to spend a few years in the South, the greater portion of them in the mountain regions of Tennessee, Northern Alabama and Northern Georgia; all of one winter, about six months, in Chattanooga. I can bear testimony to the wholesomeness of the entire region for the greater part of the year, and in the mountain regions for all of the year; in the valleys there are about two months in the summer season when malaria is quite prevalent, but up in the mountains it is eminently a healthy country. The air is pure, the water is good, the scenery is magnificent; there is everything to entertain and amuse one so far as scenery is concerned. The region of Chattanooga is peculiar and delightful from the variety of the mountain and valley scenery. The entire year, or very nearly so, it is practicable for people to be out of doors. During the latter part of December, all of January and the early part of February, the temperature is subject to considerable variation; it is reasonably cold and there are some storms, but after the middle of February, with the exception of now and then a short storm, the climate is delightful, extending thus through the whole summer. The altitude in the mountain region is such as to render the summer not oppressive. I fancy that for the colder and stormy portion of the winter the region south of Atlanta might be better for consumptive patients than north of the Atlanta, although personally I do not know as I was not so far south. There is Macon, and that part of Georgia fifty miles north of the coast, and extending through Georgia and Alabama to the region of Mobile. Quite early in the spring one can come northward, coming north of that range of mountains into the valley this side of the Atlanta, to Marietta, and find a delightful spring climate, with a great deal of sunshine, and a forest filled with bloom for two months in the spring, and everything, as far as climate and scenery are concerned, to delight even a sick person. There is much to recommend the region of Chattanooga to invalids, and if they are not satisfied with Chattanooga or the vicinity, there are other points, Marietta, Atlanta, and north of the Tennessee river, the region of Huntsville, and north from that as far as Nashville, so that consumptive patients or invalids

may be in a mild invigorating temperature, really all the year in the space of a couple of hundred miles.

Dr. Wm. T. Belfield presented a

PROSTATIC MYOMA—A SO-CALLED "MIDDLE LOBE" OF THE HYPERTROPHIED PROSTATE—REMOVED BY SUPRA PUBIC PROSTATOTOMY.

The patient, a man 73 years old, had for several years experienced difficulty in urination, and for nearly a year had been practically dependent upon his catheter. There was found symmetrical enlargement of the prostate per rectum, dilatation and catarrh of the bladder, and an impediment at the bladder neck to the entrance of rigid instruments. Exploration of the bladder by supra-pubic incision revealed a solid prostatic outgrowth, or "middle lobe," as large as a hazel-nut and of flattened pear-shape, springing by a short, narrow pedicle from the vesical orifice. The pedicle was twisted off with forceps and the growth removed. Recovery was uninterrupted, the fistula closing entirely on the seventeenth day. Patient has since urinated freely without a catheter, and can now almost completely empty the bladder; the cystitis has subsided.

Dr. Belfield also presented specimens of

MUCOUS CASTS FROM A CASE OF MEMBRANOUS ENTERITIS.

The patient was a nervous, rather hysterical lady about 35 years of age, who for several years had at intervals suffered from severe intestinal colics, followed in a day or two by diarrhœa with the expulsion of these casts; for several days thereafter much soreness and tenderness of the abdomen was experienced. The casts appear under the microscope as amorphous pseudo membrane enclosing cast-off epithelial cells. They are said by DaCosta to give the chemical reactions of mucin. This patient improved materially under small doses of bichloride of mercury and pills of iron, arsenic and strychnine.

Dr. Belfield also exhibited a

FOREIGN BODY FROM THE BLADDER;

a roll of chewing gum, two inches long, partially encrusted with urinary salts, which had been removed from the bladder of a young man by Dr. T. W. Miller. The patient, suspecting he had a stricture, had explored his urethra with a well-masticated roll of chewing-gum stuck upon the end of a broom straw. When the straw was withdrawn the gum had disappeared. Acute cystitis ensued. Attempts to detect and extract the gum with a small lithotrite having failed, perineal urethrotomy was performed and the gum extracted by the finger. Patient entirely recovered in two weeks.

Dr. Belfield also presented a

FRAGMENT OF THE OCCIPITAL BONE

of irregular quadrilateral shape, three inches long and two and one fourth inches broad, its longest edge serrated for articulation with the right parietal bone. The fragment was removed by him from a young man who had suffered a compound comminuted fracture of the skull, by a blow with a sharp iron instrument which had penetrated the brain to depth of over an inch. On admission to the County Hospital over a teaspoonful of brain substance was found among the hair; the scalp and dura mater were badly lacerated. The fragments of bone were removed, the wounds in the brain substance cleansed and drained, and the scalp wound sewed up. After the fourth day the temperature remained normal; the wound was entirely healed in a month, the dressing having been changed four times during that period. The scalp is depressed over the seat of fracture, and still pulsates with the brain.

Dr. Belfield also presented a specimen of

INTESTINE COVERED WITH MILIARY TUBERCLES; DEATH FROM MILIARY MENINGITIS.

This specimen is a piece of intestine the peritoneal covering of which is full of miliary tubercles. This case was a girl about twenty years old, who had always had excellent health. Three sisters are still living, and neither they nor the parents, nor any of the relatives so far as known, have ever shown symptoms of tuberculosis. The present generation are examples of perfect health, and this girl was in many respects apparently the healthiest of the lot. Until five days before her death her health was as usual; then she complained of feeling ill one evening; her head ached; she vomited without apparent cause; she lay down, drank a cup of tea, and was all right. The same thing happened the next day, and she complained of extreme headache. On the third day, with the exception of severe headache and vomiting without cause, she maintained her usual health. The evening before her death she was at the theatre, and came home about 11 o'clock, going to bed with one of her sisters. During the night the sister was several times awakened by the extraordinary breathing of the patient, which was very hard and loud. She shook her and the abnormal breathing ceased. In the morning it was found impossible to wake this girl; she was breathing very deeply and slowly and could not be roused. Physicians were summoned and all of them pronounced it a case of opium poisoning. The symptoms as related to me were stertorous breathing, sometimes as slow as four or five per minute, contracted pupils, a suggestion of strabismus, and rather warm surface. The pulse was remarkably good, about 80, similar to the pulse of a healthy person; the skin was not moist and clammy. The physicians instituted the usual measures for opium poisoning; they gave mustard at once, and as soon as a tube could be procured pumped out the stomach. They injected minute doses of atropine hypodermically, the patient receiving about a fortieth of a grain in three injections. The breathing improved very much after these injections, coming up to twelve and fifteen per minute; the pulse also quickened; suddenly the pulse flickered and went out, and the breathing stopped.

On the following day the Assistant County Physician and myself made a post-mortem examination, which included the head and abdominal cavity only. The brain was not hyperæmic, there was no venous congestion, the pupils were widely dilated; the membranes of the brain were adherent to the brain sub-

stance, and on stripping them off and examining them there were found numerous miliary tubercles. On opening the abdominal cavity the intestine bulged out, its surface thickly studded with miliary tubercles; there was extreme tuberculosis of the peretoneum and the mesenteric glands were large and cheesy; there was a ruptured cyst of the right ovary, about as large as a fist. That the rupture was antemortem was evident from the fact that the inner surface of the cyst was intensely congested; there was a good deal of coagulated blood in its cavity. While it would be impossible to say that no opium had been taken, yet it seems probable, when we consider that the pulse was natural, that the surface was not cool and clammy, and that there was a tendency to strabismus, that her death resulted from the tuberculosis, perhaps rupture of the cyst. There was no morphine found anywhere around, and her general disposition and circumstances were such as to forbid the conception by her friends that she could have taken poison. The case seems to have been another instance of sudden coma incident to tubercular meningitis. It is of extreme interest as showing how insidious miliary tuberculosis of the serous membranes may be. The only abnormal feature known to her family was an unusual fulness and hardness of the abdomen, developed during the last year of her life.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, January 19, 1887.

The President, Jos. Taber Johnson, M.D., in the Chair.

H. M. Cutts, M.D., Secretary.

Dr. D. S. Lamb presented specimens of

CANCER OF THE SUPRARENAL CAPSULES AND ADDISON'S DISEASE.

The following three cases are reported to illustrate cancer of the suprarenal capsule contrasted with that lesion of the capsule, viz.: cheesy degeneration, which is so usually found in Addison's disease.

Case 1.—General Cancer, attended by Drs. D. W. Prentiss and Frank Baker; in which I made the necroscopy assisted by Dr. Baker. The patient, Mrs. Rosina M., white, age 61, died September 22, 1882. The following lesions were noted at the p. m. ex. Petechiæ on anterior and inner surfaces of thighs; upper limbs emaciated; lower limbs markedly œdematous. Cicatrices of pregnancy on abdomen. Head not examined. Thoracic viscera normal except a small cicatrix at apex of right lung. Abdomen contained many soft white flakes of lymph and yellowish serum. Greater omentum contracted, thickened and contained cancer nodules. Stomach contracted to six inches in length and three in breadth; middle portion adherent to adjacent viscera and walls occupied by a thick hard cancerous mass, deeply ulcerated; the ulcerated surface was shreddy, and dark from hæmorrhage. Intestines normal. Liver small, congested and in an anterior part, showed several cancer nodules. Gall bladder much distended with bile. Spleen small, soft, firmly adherent to adjacent organs, and contained one hard cancer nodule. Pancreas and kidneys normal. Suprarenal capsules much enlarged and converted into a cancerous mass. Ovaries atrophied and undergoing colloid degeneration. Lumbar and left iliac glands enlarged and cancerous. Microscopical examinations of the several organs by Dr. J. C. McConnell of the Museum showed cancer as stated.

Case 2.—Cancer.—Woman, age 35, was five days in Freedmans Hospital, in this city, where she died. She was anæmic, constipated, urine albuminous; and had convulsions. She was attended by Dr. F. J. Shadd, of the hospital, who made the necroscopy and contributed the specimen. This consists of the right kidney which is normal; and its suprarenal capsule, which is converted into a soft cancerous mass, 4 inches by 3.5 by 3 and was adherent to liver. Renal vein and inferior vena cava were occupied by blood clots, which were closely adherent to the walls; in some places the inner coat was thickened as by incipient cancerous growth. Left kidney normal.

Case 3.—Addison's Disease.—Attended by Dr. J. T. Young; Mrs. Lucy W., white, widow, age 31. tailoress. First noticed a discoloration around her mouth three years before death, that is, in 1872. This extended but little until the summer of 1874; afterwards it spread rapidly until the whole body was affected. Black spots appeared in January, 1875. The patient's previous health had been pretty good except that her monthly periods had for a long time occurred every three weeks, and were sometimes excessive in quantity. She had never been pregnant, though married seven or eight years. About the beginning of the winter of 1874–5, she began to complain of feeling week, could not work regularly, and working was followed by prostration. After January 1, she gave up working altogether. Her feet and legs became swollen; she had constant pain in her back and left side, and had dyspnœa on going up stairs. Dr. Young first saw her in March, 1875. On the 25th of that month. fæcial erysipelas set in and lasted six days. April 5, there was uncontrollable nausea and vomiting, which continued. She could take but little nourishment, had severe pain in epigastrium and constant tired feeling; sleeplessness; pulse small and weak. Died April 15.

I made the necroscopy and found lesions as follows: Face a faint yellowish-brown color, and showed many black spots from one-eighth to one-fourth of an inch in diameter, some slightly elevated, some of a uniform tint, others darkest in the centre: body and limbs of a lighter color than the face, and showed a few similar black spots. Head not examined. Abundance of fat in subcutaneous connective tissue; one inch thick over the abdomen. Right lung collapsed, congested posteriorly, contained several calcareous deposits; firm old pleuritic adhesions. Left lung similar to right; calcareous deposits more numerous and larger; adhesions more extensive. Heart flabby, contained a few small clots and a little blood. Large

calcareous mass in a greater omentum. Stomach and intestines normal. Liver extended up to third rib, was dark-red and somewhat flabby. Gall bladder full of dark green bile. Spleen normal. Kidneys dark. Suprarenal capsules contained cheesy masses, larger in the right. Firm adhesions of omentum, liver and spleen to abdominal wall. Posterior adhesions of uterus. Bladder empty.

The diseases to which the suprarenal capsules or as they are also called, the "adrenals" are subject, are mainly secondary to similar lesions elsewhere; sometimes by extension, by contiguity at others, by infection from distant organs. Thus we have lardaceous degeneration, cheesy degeneration, tuberculosis, cancer, embolism, abscess.

The glands may also be affected by direct violence. The only lesion which appears to cause definite symptoms is the cheesy degeneration. It is generally admitted that the disease known as Addison's disease is intimately related to this form of degeneration of the suprarenal capsules. The exceptions are very few in number.

In the first case, here reported, of cancer, the greater omentum, liver, spleen, stomach, lumbar and iliac glands and adrenals, were all involved in the disease; it is probable that the primary disease was in the stomach, the other organs being affected by secondary infection. No history is given, but there is nothing in the necroscopy to suggest Addison's disease. And the recorded cases of cancer of the adrenals rarely, if ever, do give clinical symptoms such as are found in Addison's disease. The second case is reported only to show how very large a malignant growth of the glands may become; there is no history, but it is probable that the case was one of general cancer like the first. It is interesting to note that the kidneys were not affected by the disease in either case.

The third case is a typical one of Addison's disease. As is usually the case, both capsules are involved; one is somewhat atrophied, the other enlarged; both show the characteristic yellow caseous degeneration in what was doubtless a firm whitish mass. The prominent symptoms connected with this lesion are: 1. Discoloration of skin, often but not very correctly called bronzing; 2. Progressive weakness; and 3. Nausea and vomiting. The case reported shows these well marked. The discoloration began three years before death, the woman then being 28 years old, progressed slowly at first, but rapidly during the last nine months of life. At death the whole body was of a faint yellowish brown hue, the color being deeper on the exposed parts; the abundant black spots, on which stress is laid by Dr. Greenhow, were also present. Progressive weakness marked the case more especially during the last four months of life. Instead, however, of being accompanied by emaciation, there was abundance of fat everywhere. About ten days before death the nausea and vomiting became uncontrollable. As is often the case, although the discoloration began so long before death, the other prominent symptoms were noticed only during the last few months.

The probable cause of the disease is obscure. The women's occupation, tailoress, suggests no explanation. The theory of Greenhow, that the disease is most often found in those who do severe manual labor, of course, is not supported. His further theory, that the cause may be found in the history of some strain or other injury, especially in women, is not confirmed, simply because it is not known if this woman ever was injured. Dr. Fagge, like Virchow and Rindfleisch, regards the disease as tubercular; and in this case calcareous deposits were found in both lungs and in omentum, suggesting obsolete tubercule. Attention was not drawn to the semilunar ganglia by any peculiarity of appearance; this is the more to be regretted in view of the opinion of some that the ganglia are responsible for the nausea and vomiting, and progressive weakness; it is not likely, however, that the discoloration is in any way due to them.

BOOK REVIEWS.

THE REFRACTION AND ACCOMMODATION OF THE EYE AND THEIR ANOMALIES. By E. LANDOLT, M.D., Paris. Translated, under the Author's Supervision, by C. M. CULVER, M.A., M.D., formerly Clinical Assistant to the Author, Member of the Albany Institute, Albany, N. Y. 8vo. Edinburgh: Young J. Pentland.

The appearance of a new edition in English of Dr. Landolt's work on the "Refraction and Accommodation of the Eye," is an event in ophthalmology, and has attracted the attention of the numerous English and American physicians who frequent the Paris hospitals. This treatise may be compared favorably with that of Donders, published in 1864 by the New Sydenham Society. The author's aim, however, is different from that of the eminent physiologist of Utrecht. The book is not intended for scientists only, but seeks also to supply students and practitioners with a manual elementary and practical, but at the same time exact and complete. The author possesses the rare ability of bringing within the reach of every one questions which are too often obscure, owing to their being too learnedly exposed. The "Manuel d'Ophthalmoscopie" of the author is simply a *chef d'œuvre* of its kind. It may be asked whether this particular quality may not be found wanting in the profound exposition of a subject so vast as the "Anomalies de la Réfraction et de l'Accommodation." But the proof is before us that one can treat these complex questions, in all their details, and with remarkable clearness, avoiding at the same time not only long mathematical demonstrations, but nearly all the formulæ of inverse value, which are the stumbling blocks of so many beginners in ophthalmology.

To facilitate the mastery of a subject so vast and complex, the author has divided it into three headings: 1. the *Physical* portion; 2. the *Theoretical*, which perhaps might have been better named the *Physiological* portion; and 3. the *Clinical* portion. The first part forms an elementary treatise upon optics, which enables even a beginner to understand the ac-

tion of the surfaces and refractive media upon light, from its passage through a plane surface, up to its complicated transmission in the dioptric system of the eye. It is scarcely necessary to say that the questions of lenses and spectacle glasses meet with special attention. This section may be read with advantage even by those who are not acquainted with algebraic formulæ, as the author gives the solution of those problems also by simple construction with diagrams. Nevertheless, the reading of this chapter is not indispensable in order to understand those following it. The latter form, so to speak, a separate work, a treatise of refraction and accommodation without mathematical formulæ and therefore very easy to read.

The second part gives a description of the dioptric system of the eye and its definition. The definitions of emmetropia and ametropia, the anatomy and physiology of accommodation and convergence and their reciprocal relations.

An excellent chapter is devoted to the methods of visual examination. All the principles of optometry are clearly discussed, but only those methods of optometry which have a real practical value are described in detail. Astigmatism, both regular and irregular, are treated by the author in a manner clear and original; he may be congratulated for having condensed all that relates to this anomaly of refraction, properly so called, into a single paragraph, instead of dividing it into two headings, theoretical and clinical, as for hypermetropia and myopia, which are due to imperfect conformation of the eyeballs rather than of the dioptric apparatus.

The Clinical chapter, as might be expected from the author's aim, is the most important. If the first two sections are remarkable for their clearness and conciseness, the third commends itself by its abundance both of clinical relations, and original and judicious views of the author. The novel classification of matter above mentioned indicates, in itself, an independent thinker. Far from making an absolute distinction between ametropia as a pathological condition, and emmetropia, the only normal state of vision, the author classes as "normal" eyes the slightly hypermetropic and myopic, together with the emmetropic. Clinically these *slightly* ametropic eyes are fairly normal, and suffer little or nothing from their defects of refraction. With the medium degrees of ametropia it is otherwise, and these comprise the hypermetropic from two to four, and the myopic from three to six dioptrics. Here not only is correction of the optical defect indispensable, but what is chiefly remarkable is the difficulty of coöperation between the eyes which characterize this medium degree of asthenopia, ametropia, and find their expression in spasm of accommodation, convergent and divergent strabismus, etc. The author calls much more attention than has hitherto been paid to the relation which exists between the functions of the two eyes, on the one hand, and accommodation and convergence on the other. These have already been studied in the physiological portion of the work, but the author here indicates new methods of mensuration (Landolt's dynamometer), and enters into fuller details of a clinical order. The analysis, and the treatment of muscular asthenopia, both palliative and radical, by means of strabotomy and muscular advancement, belong entirely to Landolt. The "metre angle" first proposed by Nagel, and which is here adopted as the unity of measure of convergence, gives clearness to the descriptions, and precision to the author's methods, some of which have already been published.

After the medium, we come to the higher degrees of typical ametropia. Here the organ of vision is in a truly pathological condition. Eyes strongly hypermetropic are arrested in their development, and those which are strongly myopic are generally affected by a series of morbid conditions of the uveal tract.

Another happy idea is the separation of typical ametropia from curvature ametropia, what the translator terms atypic aphakia, etc.

The last chapter treats of the anomalies of accommodation, of myotics and mydriatics, and an appendix only, a kind of postscript, is devoted to presbyopia. It is somewhat surprising to find an anomaly of refraction which has hitherto met with universal recognition dismissed in this summary fashion, but Landolt goes still further. He would, as he has already pointed out in his "Manual on the Examination of the Eyes," abolish the term altogether. He explains that the word presbyopia implies necessarily a fixed distance for near vision, and this conception may lead to serious errors: there is only one exact way of adapting the eyes to the visual distance, whether it be long or short, and this is by a careful examination of their statical and dynamic refractions, and the functions of the motor muscles. From these data alone can the question of corrective glasses be settled, and it is unnecessary to resort either to a given distance of near vision, or to standard diagrams for presbyopia. Landolt is the more authorized to do so, as he was the first to study the quota of accommodation and convergence; that is to say, the quantities of these two functions which the eyes can dispose of for prolonged work.

To conclude, this work is full of new ideas and means of investigation, and operative methods devised by the author. It will be read with profit not only by students, but also by ophthalmologists, and will doubtless become one of our standard text books.

Manual of Operative Surgery. By Joseph D. Bryant, M.D., Professor of Anatomy and Clinical Surgery, and Associate Professor of Orthopedic Surgery, Bellevue Hospital Medical College, etc. With about 800 illustrations. 8vo, pp. xxvi, 530. New York: D. Appleton & Co. 1887. Chicago: A. C. McClurg & Co.

One does not read very much of this book before finding that its author is impressed with the necessity of a surgeon knowing his anatomy; anatomical relations are frequently and carefully given, so that the reader will not have to turn alternately from the book in hand to an anatomy. In very many respects the book is an excellent manual of operative surgery; it is well written, and the illustrations are

good. But some matters which may be regarded as important are omitted: for example, no mention is made of the treatment of stricture of the urethra by electrolysis, of the operation of shortening the bones in extensive injury to soft parts; the very important details of correct operative procedures in cases of rupture of the bladder are omitted. The directions for the Wladimiroff Mikulicz operation (which is ascribed to Mikulicz, and is called "osteoplastic amputation of heal and ankle) are incompletely given, as are the indications for it. In the account of litholapaxy the evacuators of Bigelow, Thompson and Otis are described and illustrated, but no mention is made of the continuous current evacuator of Professor Edmund Andrews, described and illustrated in THE JOURNAL of June 5, 1886, the advantages of which should be apparent to anyone who has been annoyed by the churning of the other instruments. With these and some other defects remedied the book will be much better. It is, nevertheless, a good guide to the performance of surgical operations.

ASSOCIATION ITEMS.

AMERICAN MEDICAL ASSOCIATION.

Section of Medical Jurisprudence.

In THE JOURNAL for February 12, 1887, page 196, the Chairman of this Section published a list of writers and the titles of these papers, at that time offered for his Section at the coming meeting of the Association, the first week in June, 1887. We are now requested to add the following:

"On State Regulation of Medical Practice. Its Value and Importance." By Dr. K. C. Markham, Independence, Iowa.

"On the Medico-Legal Relations of Alcoholic Liquors, Fermented and Distilled." By Dr. N. S. Davis, Chicago.

"On the Jurisprudence of Mental and Nervous Diseases." By Dr. S. V. Clevenger, Chicago.

"On the necessity of a Uniform Standard of Education, Especially more Detailed Pathological Instruction to Unity of Professional Action in Forensic Medicines." By Dr. Frank S. Billings, Lincoln, Neb.

"On Mental Responsibility in Inebriety." By Dr. T. D. Crothers, Hartford, Ct.

"On Paralytic, Aphasia and Apoplectic Conditions in Return of Testamentary Capacity." By Dr. E. C. Spitzka, New York.

"Report on the Present State of our knowledge Concerning Concussion from Railway Accidents." By Dr. N. E. Brill, New York.

[Who of the officers of Sections will report progress next?—EDITOR.]

MISCELLANEOUS.

MILK INFECTION: A SUGGESTION.—Dr. James F. Allen, medical officer to the Corporation of Pietermaritzburg, has written a very suggestive report on the causes of enteric fever in that city. Pietermaritzburg, he says, is in fair sanitary condition. It has a public water supply, and the houses in which enteric fever made its appearance were not those in which any local condition of house construction could give rise to it. Last year this disease broke out round a small dairy on the outskirts of the town, the occupants of the farm entirely escaped, so far as he could ascertain. In this dairy specific enteritis among the calves had been very fatal; all the calves contracted the disease, and in each case it ended fatally, eight or nine dying altogether. The proprietor of the dairy states that the pasturage round his house is very unhealthy, and last year the calves were therefore kept tied up; nevertheless they did not escape the disease; but Dr. Allen notes that full-grown animals are exempt from it. As a rule, the calf disease made its appearance in this farm late in the summer, but last year the first calf must have died about the end of July or the beginning of August. Thirteen cases of enteric fever occurred altogether among persons resident in the neighborhood—one in August opposite the affected dairy, the family of the sufferer receiving milk from this source. In another house five cases occurred among a household of seven. This household did not receive milk from the suspected dairy, but they used for fuel cowdung collected in the neighborhood—not from the affected calves, for these were tied up; but perhaps from other animals suffering from the same disease. In another family two cases occurred, and in this house cowdung was also used for fuel, the source from which it came being unknown. Another case occurred in the person of an infant at its mother's breast, but this child, the mother states, received no other milk than her own. Concerning the household, no distinct mention is made of the fuel used for burning. The remaining four cases were all in one house; milk was not received by this household from the suspected dairy knowingly at the time of the appearance of the first case, but during this child's illness this dairy supplied the milk for the rest of the family, but it was at this time regularly boiled. Later, however, this precaution was neglected, and three other persons then contracted enteric fever. There is to be found in these cases nothing more than a suggestion that the bowel discharges from the animals in the dairy may have been concerned in the production of some of the cases of enteric fever in the neighborhood. Dr. Allen has omitted to state the total number of households using for fuel the material which he suspects has given rise to disease, and the whole facts are therefore not sufficiently before us to enable any positive opinion to be formed on the subject; but Dr. Allen's story is well worth bearing in mind in any further investigation into the etiology of this disease. In another report Dr. Allen insists upon the simultaneous appearance of enteric fever, among the inhabitants of the neighborhood of the farms, and the appearance of what he describes as specific enteritis among the calves. He states that he examined the mesentery and small intestines of one of these animals; that he found the mesenteric glands

enlarged, and in the intestinal mucous membrane evidence of the same diseased action as is to be found in that of human beings after death from enteric fever—thus ulceration and patches of inflammation involving Peyer's glands are to be found in both diseases; and he asserts that the two disorders in Pietermaritzburg at least are always found together.—*Lancet*, Nov. 20, 1886.

Health in Michigan.—For the month of February, 1887, compared with the preceding month, the reports indicate that remittent fever decreased in prevalence. Compared with the preceding month, the temperature in the month of February, 1887, was higher. The absolute humidity, the relative humidity, the day ozone and the night ozone were more. Compared with the average for the month of February in the nine years, 1879–1887, intermittent fever, pneumonia, diphtheria, consumption of lungs, and influenza, were less prevalent in February, 1887.

For the month of February, 1887, compared with the average of corresponding months, for the nine years, 1879–1887, the temperature was slightly higher, the absolute humidity was more, the relative humidity was much more, the day ozone was slightly less, and the night ozone was less.

Including reports from regular observers and others, diphtheria was reported present in Michigan, in the month of February, 1887, at thirty four places, scarlatina at forty-two places, typhoid fever at sixteen places, and measles at twenty-four places. Reports from all sources show diphtheria reported at twenty-two places less, scarlet fever at six places more, typhoid fever at two places more, and measles at three places more in February, than in the preceding month, January, 1887.

Michigan State Board of Health.—At the 276th meeting of the Brooklyn Pathological Society, held at the Brooklyn Eye and Ear Hospital, February 24, 1887, the following resolutions was unanimously adopted.

Whereas, the State Board of Health of Michigan, has been for many years a pioneer in the investigation of disease and the collection of vital statistics, and

Whereas, the result of these investigations and of the collection of these statistics, has been to stimu men and boards of health throughout the country to undertake similar work for the public good, therefore be it

Resolved that the Brooklyn Pathological Society heartily endorses and commends the course so admirably planned and so efficiently followed by the State Board of Health of Michigan, and respectfully but earnestly, appeal to the legislature of that State to be liberal in its support to its State Board of Health, and to widen its influence and usefulness by appropriating the necessary funds to establish and maintain a Laboratory of Hygiene.

New Medical Journals.—*The Journal of Obstetrics and Gynecology* is the Anglicized title of a new Russian medical journal, the organ of the Obstetrical and Gynecological Society of St. Petersburg.

The *Revue Générale de Clinique et de Therapeutique*, the first number of which appeared on February 17, is a weekly which, according to the preliminary notice, will be on the plan of the *London Medical Record*.

Capital Punishment by Electricity is now proposed, and is receiving favorable consideration by a legislative commission appointed by the New York Legislature to inquire into various devices for putting murderers to death.

"Pilocereus Senilis" is the title of a volume of the collected writings of the late Dr. Walter Moxon, of Guy's Hospital, which has been recently published by Sampson Low & Co., of London.

Vaccination in Africa.—Archdeacon Farrar, of Magila, writing from East Africa, says: "We have just saved the whole district of Magila from an invasion of small-pox, vaccinating everybody, at the rate of about fifty a day, until all have been vaccinated; so that while other districts have suffered considerably around us, there has not been a single case of small pox in the Magila district, with its hundreds of villages, and thousands of people. This, of course, has commended our medical science to the people, and they come in numbers."

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 26, 1887, TO MARCH 4, 1887

Major Chas. R. Greenleaf, Surgeon, ordered for duty in the office of the Surgeon-General of the Army. S. O. 41, A. G. O., Feb. 18, 1887.

Major D. L. Huntington, Surgeon, relieved from duty in the office of the Surgeon-General, to take effect March 1, 1887. S. O. 41, A. G. O., Feb. 18, 1887.

Major David L. Huntington, Asst. Surgeon, ordered for duty at San Diego Bks., Cal., and granted leave of absence for one month from March 1, 1887. S. O. 45, A. G. O., Feb 25, 1887.

Capt. Robert H. White, Asst. Surgeon, on being relieved by Major Huntington, to proceed to Angel Island, Cal., and report to commanding officer for duty at that point. S. O. 45, A. G. O., Feb. 25, 1887.

Capt. Louis S. Tesson, Asst. Surgeon, ordered for duty as attending surgeon at hdqrs. Div. of the Missouri and examiner of recruits at Chicago. S. O. 44, A. G. O., Feb. 24, 1887.

Capt. Wm. W. Gray, Asst. Surgeon, leave of absence for seven days extended twenty-three days. S. O. 13, Dept. Dak., Feb. 21, 1887.

First Lieut. Chas. F. Mason, Asst. Surgeon, resignation accepted by the President, to take effect March 25, 1887. S. O. 44, A. G. O., Feb. 24, 1887.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE FIVE WEEKS ENDED MARCH 5, 1887.

Guitéras, John, P. A. Surgeon, granted leave of absence for twenty-one days. Feb. 28, 1887.

Pettus, W. J., Asst. Surgeon, to proceed to Charleston, S. C., for temporary duty. Feb. 28, 1887.

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ORIGINAL ARTICLES.

THE PRACTICE OF MEDICINE AMONG THE GREEKS PRIOR TO THE AGE OF HIPPOCRATES; A CONTRIBUTION TO THE HISTORY OF MEDICINE.

BY J. M. BALL, JR., M.D.,
OF WATERLOO, IOWA.

At a time when Egypt, Chaldea and Phœnicia were enjoying the benefits of an advanced civilization, the early inhabitants of Greece, called Pelasgi, were living on the acorns of the forests, clothing themselves with the skins of wild beasts, and sleeping in caves. The arts and sciences were carried to Greece by the emigration of successive parties from Tyre and Memphis. It is said that Inachus, the victim of a revolution, conducted the first Egyptian colony to Greece, where he founded the city of Argos, 1,856 years before the common era. The indebtedness of Greece to the civilization of Asia and Africa was amply repaid by the Ionian migration.

Of all the Greek peoples the Ionians were the most intellectual, and they were so, not through any inherent faculties in themselves, but simply from the force of circumstances. At a remote period in their history they were forced to leave their homes on the shores of the Corinthian gulf, and to seek a new abode. For a short time they took refuge in Attica, whose territory was found to be too small to support the increase of population. Accordingly, they resolved to seek new settlements in the East, and in their passage across the Ægean Sea they colonized most of that group of islands called Cyclades. On reaching Asia Minor, they took possession of that strip of country lying between the rivers Hermes and Meander, together with the islands Samos, Cos, Lesbos, Chios and others. This migration was of great subsequent importance. While their kinsmen in Attica were struggling for a bare subsistence, and were often hard pressed by the neighboring tribes, the Ionians, having settled in a fertile and luxurious country and among a race wealthier, but far inferior to themselves, soon found those means of ease and leisure which, to a certain extent, seem necessary to the development of intellectual culture.

It is the object of this article to describe the condition of medical practice among the ancient Greeks prior to the age of Hippocrates. The writings of Homer present us with a vivid picture of the state of Europe a thousand years before the birth of Christ. A twilight was dawning on the most eastern verge, in the countries adjoining the Hellespont, but the West and the North were immersed in darkness. "In the intellectual infancy of a savage state, man transfers to nature his conceptions of himself, and, considering everything that he does is determined by his own pleasure, regards all passing events as depending on the arbitrary volition of a superior but invisible power."[1] The white race at that period was like a child. To the Greek, no fiction was too marvellous for belief, if it was separated from his view by a hundred years or a hundred miles; the exaggeration of tradition confirming it in the one instance, and the difficulties of travel in the other. Every hill had its supernatural legend, every forest its phantom, and even the mouth of hell was said to be on the farther side of the Euxine. The medical mythology of the Greeks is remarkably full, and the learned Le Clerc,[2] with commendable zeal, has searched through history, poetry and inscriptions, hoping to find something which would shed light upon the origin of our science. He details the names of more than thirty gods and goddesses, heroes and heroines who possessed a knowledge of medicine.

The first of the Greeks who immortalized himself by his wonderful cures was Melampus, to whom altars were erected by his grateful patients. He is said to have lived 200 years before the Trojan war. His most famous cures were performed upon the daughters of Proteus, King of Argos, who were afflicted with outbreaks of mania, during which they imagined themselves transformed into wild beasts and ran raging through the forests. The cure is said to have been effected by the administration of hellebore.[3]

Medicine was brought to Greece by the sage Chiron. There is much mystery attached to his character and to everything connected with him, but what we may consider as the most probable conclusion is that he was a prince of Thessaly, who lived a short time previous to the siege of Troy, that he was far superior to his contemporaries in knowledge, and that, after the manner of his countrymen, he was so frequently seen on horseback as to give credence to the fabulous story of his being a centaur.[4] He held his school in a grotto in Thessaly and, if the chronicle may be believed, no philosopher of antiquity, no

[1] Jno. W. Draper: History of the Intellectual Development of Europe.
[2] Daniel Le Clerc: Histoire de la Médecine. Amst., 1723.
[3] Kurt Sprengel: Geschichte der Arzneikunde. Halle, 1792.
[4] Bostock: Sketch of the History of Medicine. London, 1835.

professor in modern times, could count in his audience as many celebrities as the centaur saw in his cave. He instructed Jason, Theseus, Castor and Pollux, the subtle Ulysses, the fiery Diomedes, the pious Æneas, and the invincible Achilles: all heroes who distinguished themselves either at the capture of the fleece of gold or in the Trojan war. He taught Apollo music, Æsculapius medicine, and Hercules astronomy. He cured Phœnix, son of Amyntor, of a blindness supposed to be incurable, and obtained great fame in the treatment of ulcers. He was shot in the knee by a poisoned arrow and prayed Jupiter to take away his life. The god heard his prayer and translated him to the heavens, where he is said to shine in the constellation Sagitarius[5]

It is to Æsculapius, the pupil of Chiron that, by common consent of antiquity, is ascribed the merit of having first devoted himself to the cultivation of medicine and of having made it a distinct object of pursuit. He passed for the son of Apollo by the nymph Coronis, and is said to have been born at Epidaurus, a city of Argolis, where he had a temple and famous oracle.[6] In passing, it may be well to remark that the ancients cherished a great veneration for the medical character. The poetical mythology of Greece shows how great was the respect and gratitude rendered to those who practiced the healing art. This is nowhere better exemplified than in the noble origin which is assigned to it in their fables. No less a personage than the god of light himself, Helios or Apollo, who created and maintains all living nature, is said to have been the father of Æsculapius, the god-like teacher of medicine. The same tradition makes Circe to have been the sister of Æsculapius.

The manner in which Æsculapius was ushered into this world was entirely in harmony with his divine character, and was of itself sufficient to show that he was no ordinary mortal. According to Ovid, he was cut out of the womb of his mother, Coronis, by Apollo after he had destroyed her for infidelity. Apollo received the information respecting the unfaithfulness of Coronis from a raven, and the angry god is said by Apollodorus to have changed the color of the raven from white to black, as a punishment for his unwelcome officiousness. The story of the unnatural manner of birth is thus related by Ovid:

> "Ut tamen ingratos in pectore fudit odores,
> Et dedit amplexus, injustaque justa peregit;
> Non tulit in cineres labi sua Phœbus eosdem
> Semina; *sed natum flammis uteroque parentis*
> *Eripuit*, geminique tulit Chironis in antrum."
> —*Metamor.*, lib. ii, v. 626.

In infancy, Æsculapius was exposed upon a mountain in Thessaly, and was suckled by a goat and defended by a dog. A shepherd having for some time missed his goat and dog, went to the mountain to seek them, and found the child possessed of extraordinary beauty. He raised the boy with the greatest care and gave him into the hands of the sage, Chiron, by whose instructions he profited so well as to far surpass his master in fame.

[5] Anthon: Classical Dictionary.
[6] Renouard: History of Medicine, translated by Comegys.

Marvellous stories are told of Melampus and Chiron. These, however, are insignificant when compared with the feats of Æsculapius. In addition to many other astonishing powers, he was gifted with a remarkable faculty, peculiar to himself, of raising at pleasure the dead to life. Not less than six or seven instances are on record of distinguished corpses that were benefited by the exertion of this happy talent. It is impossible to say how far the bounds of science might have been enlarged by so mighty a genius had not Pluto taken alarm at his progress, and presented a memorial to Jupiter, humbly showing that if a stop were not put to the career of this officious mortal, people would soon cease to die and hell would become a desert; whereupon Jupiter killed Æsculapius with a thunderbolt. It is probably for this reason that the modern children of Æsculapius abstain from working miracles.

We find Æsculapius first mentioned in the Homeric poems as a Thessalian king, not as a god, although divine honors were paid to him in later times. There is no sign in the writings of Homer of the subordination of medicine to religion which is seen in ancient Egypt, nor are the priests charged, as in that country, with medical functions. These are facts which throw grave doubts upon the commonly received opinion that medicine derived its origin in all countries from religious observances. Although medicine among the Homeric Greeks was quite distinct from religion, yet the worship of Æsculapius as the god of healing demands some notice. Sick persons repaired, or were conveyed to the temples of Æsculapius, in order to be cured, just as in modern times relief is sought by a devotional pilgrimage, or from the waters of some sacred spring. Then, as now, the healing influence was sometimes sought by deputy. The sick person or his representative, after prayer, sacrifice and ablution, was made to sleep upon the hide of the sacrificed animal, or at the feet of the statue of the god, while sacred rites were performed. In his sleep the appropriate remedy was indicated by a dream. The record of the case was inscribed on the columns or walls of the temple. Æsculapius obtained in antiquity a veneration which was almost universal, and his worship, which passed from the Greeks to the Romans, extended to all countries subjugated by the two nations. Fifty years after the destruction of the kingdom of Priam, there was erected at Titanus, a city of Peloponnesus, the first temple in his honor. This edifice was reared by the grandson of Æsculapius, Alexanor, the son of Machaon. The worship of this god spread with great rapidity.

The noted asclepia were very numerous, and in the work of Schulz more than sixty of them are described.[7] Among the many temples consecrated to this god, those at Epidaurus, and on the island of Cos, were particularly famous. The island of Cos, for centuries, remained the Mecca of medicine. None but the initiated could enter these holy shrines, and the exclusion of all unholiness extended to all other temples. Only the priests could look upon the columns of Hygeia at Ægeum; no dog was permitted to enter

[7] Schulz: Historia Medicinæ a Rerum Initio ad Annum Urbis Romæ, DXXV. Lipsiæ, 1728.

at Delphos; no child could be born at Epidaurus, and no one was allowed to die within its grounds. In the last temple there was a statue of colossal size, the handiwork of Trasymedus, made of gold and ivory, which represented the god of medicine in the form of an old man seated on a throne, holding a staff in one hand and resting the other upon the head of an enormous serpent. A dog, the emblem of vigilance, lay reposing at his feet. The whole figure bore a striking resemblance to that of Zeus.

The serpent was always the chief symbol of Æsculapius, and all the coins stamped in his honor are thus marked. From time immemorial the snake has been the symbol of craft and prophecy. Moses erected a snake in the desert of Arabia; the natives of Guinea still worship a holy serpent, and the Phœnicians and Egyptians always regarded it as divine. There are many reasons for this reverence: The snake was formidable in appearance on account of its fiery eyes and the activity of its poison; it moved quickly, and in moving described curious, mystic figures upon the ground; it had a long life, with apparent capacity for rejuvenation. Being found in grottoes and holes by the side of springs and healing waters, it came to be regarded as the guardian of these trusts. The Asclepiadæ kept tame snakes which licked the hands of the sick with their tongues or twitched their ears with their mouths. The Epirotes kept snakes in the grove of Apollo, and every year a virgin, naked and alone, entered the grove to feed them. We are told that around Epidaurus there were serpents of a yellowish-brown color, whose bite was not poisonous, and that these were used by the priests in those supernatural performances which filled the people with fear and astonishment.

Although the accounts which have been transmitted to us respecting Æsculapius would lead us to conclude that he was a real personage, who possessed a greater degree of skill than his contemporaries, yet his whole life is so involved in fable and mystery that it is impossible to obtain any correct ideas of the details of his practice. We have no direct evidence to show how far internal remedies were administered, and it may be supposed that the Greeks at this period relied largely upon the use of magical arts and incantations. Although we have reason to believe that certain vegetable products were employed as internal remedies, yet we are scarcely able to ascertain what was the object of the practitioner and what were the plants used. The poet Pindar, who lived 800 years later, was the first to comment upon the practice of this personage, which he described as follows: "Æsculapius cured the ulcers, wounds, fevers and pains of all who applied to him, by enchantments, calming potions, incisions and external applications."[8] It is said that Æsculapius obtained from Minerva the blood which flowed from the veins of Medusa after the latter had been beheaded by Perseus. With that which flowed from the left side he destroyed his enemies; while that obtained from the veins on the right was used for the benefit of his patients.

The practice of medicine remained for a considerable time hereditary in the family of Æsculapius, and his descendants, called Asclepiadæ, were the priests who presided over the temples erected in his honor. The temples were built in salubrious localities, sometimes on the summit of a hill or on the side of a mountain; sometimes on the sea shore, or near a thermal or mineral spring, and in spots where groves of trees could refresh the sight of the sick and afford them cool and solitary retreats.[9] In the selection of the sites for the temples, the priests displayed the shrewdness which has characterized them ever since. Thus we see that they were erected under circumstances not a little resembling those found conducive to health by the invalids of modern times. Some of the practices enjoined by the priests were of a dietetic nature and were directly conducive to temperance and cleanliness. The isolation and seclusion of the temples was well calculated to excite the reverence of superstitious and credulous minds, and this feeling was greatly heightened by the preparation of fasting and prayer which was made a necessary preliminary to entering the gates. The temple at Orophus was open only to him who had first fasted for several days; no wine could be drunk for three days, and no food tasted for twenty-four hours before admission to the temple at Pergamus. In addition to these preparations, offerings were made of a cock or a goat, as in the sacrifices of Socrates; prayer attended the ceremonies, and the service was further sanctified by music. The patient was bathed, subjected to frictions and manipulations, and then anointed with oil. Apollonius anointed himself, before entering the temple, by pouring oil of amber upon his head, so that the body smoked, and physician and patient were enveloped in a halo. After enwreathing themselves, the patients entered the temple amid the singing of hymns and the playing of harps. In the sleep which followed, Æsculapius appeared in a dream and indicated the proper treatment. All antiquity had faith in dreams, and their interpretation was the business of the priests. Sacred and profane history are full of examples which attest the universality of this belief. The Asclepiadæ did not stop with interpreting the dreams of their patients; when occasion required, they even dreamed for them themselves.

In return for their services in behalf of suffering humanity, the Asclepiadæ received no direct emolument, but were paid by presents from the patients. These were often of great value, such as vessels of gold and silver; often casts of the affected member, the so-called anathemas, were made from these precious metals and donated to the priests. At Amphianus it was customary to throw silver coins into the sacred springs. In some places paintings of the diseased parts were suspended from the walls of the temple, or the name of the patient with a description of his disease, the remedies employed and the result attained, were engraved on metal tablets (tabulæ votivæ), doorposts, or columns. Six such columns, with Doric inscriptions, were still standing in the time of Pausanius, in the asclepion of Epidaurus. As soon as an important remedy was discovered, the mode of preparing it was written on the gates and

[8] Pindar: Third Pythian Ode.

[9] Lessing: Handbuch der Geschichte der Medizin. Berlin, 1838.

columns of the temples. Thus, a celebrated anti dote for snake-bites, the contribution of Eudemus, was recorded on the door of the asclepion at Cos, and a noted eye-wash was affixed to a similar place at Ephesus. Those who invented surgical instruments deposited them within the temple. Thus Erasistratus, according to Cœlius Aurelianus, presented one to the temple at Delphos, intended for the extraction of teeth. In this manner the temples gradually became centres for medical instruction.

Gruter[10] has given a copy of several votive tablets which were unearthed on the Isle of the Tiber, on one of which the following was inscribed in Greek: "Lately a certain Caius, who was blind, came to consult the oracle. The god required that he approach the sacred altar to perform adorations; at once he passed from the right to the left, and having rested his fingers on the altar, he raised his hands to his eyes and immediately recovered his sight. The people rejoiced to see such marvels accomplished under the reign of our august Antoninus." It is more than probable that Hippocrates, the central figure of ancient medicine, obtained much of his knowledge from reading the votive tablets and inscriptions found in the temples.

Statues of Æsculapius were to be found in all the temples. The god of healing was always figured in the form of a strong and venerable man with full beard and gray hair, who in earnestness and mildness of expression bore a striking resemblance to Jupiter. Although sometimes seated, yet generally he was seen standing erect or leaning on a staff, around which a snake was seen twining its spiral coils. He was usually covered with a pallium with regularly disposed folds resting upon his right shoulder and exposing the greater part of the chest and abdomen, whose well-formed muscles showed him to be possessed of great strength. Rarely was his head covered, but frequently it was adorned with a laurel wreath or a nimbus. At his feet was a mystical globe. Sometimes he was seen bearing a strobile of pine. The animals most frequently seen with Æsculapius were the cock, which Socrates mentioned in his last hours, the owl, the eagle, the hawk, the ram, or, what to him was most sacred, the serpent. Sometimes he was figured alone, but frequently one of his daughters, usually Hygeia, accompanied him. She is represented as clad in a long folded garment of white, holding in her left hand a serpent, while the right contained a shallow dish or patella, filled with consecrated food to which the snake is directing its attention. Between these two figures often stood another of dwarfish aspect and doubtful origin, the child Telephorus, or the Harpocrates of the Egyptians. His finger pressed to his lips was symbolic of the secrecy which appertains to the mysteries of the art.[11]

The practice of medicine in the temples of Æsculapius may be divided into two epochs. In the first, which extends to the time of Hippocrates, the Asclepiadæ, although for the most part employing superstitious means, rendered a service to science by the custom developed among them of observing the phenomena of disease. In those barbarous times medicine could make more progress in the hands of a secret order like the Asclepiadæ than if it had been a domestic and popular art. It was not to be expected that at this remote period, when all knowledge was in an infant state, a man of genius could be raised up, who would elevate medicine to the rank of a science. In the second epoch, which extends from the time of Hippocrates to the institution of Christianity, the influence of the priests gradually declined, and the practice of medicine in the temples was little better than a gross superstition.[12]

The remembrance of the benefits of Æsculapius was perpetuated by the institutions of feasts which were celebrated with much solemnity at Epidaurus, Ancyra, Pergamus, and Cos, and at which the greater part of the inhabitants of the cities of Asia Minor congregated at certain periods.

The course of instruction among the Asclepiadæ was in conformity to the national habits. Young men, about to commence the study of medicine, were not allowed to enter until after the completion of a preparatory course of three years, from the fourteenth to the seventeenth years, but the sons of physicians began earlier, and with both the medical training continued seven or eight years. The neophyte was conducted into his art with all the secrecy and exclusiveness that had prevailed, from the remotest antiquity, among the handicraft associations and religious orders, and which, at a later period, was to be found in the political clubs and schools of philosophy. Some of these societies were for charitable purposes, some for the promotion of commerce, some for the cultivation of knowledge, while others were for the purpose of controlling the affairs of state. In each of them, the ceremony of initiation, however distinctive it might appear to be, was modeled after that of the Eleusinian mysteries. Of these mysteries there were two grades, the greater and the lesser; and of each division there were several degrees. The celebration of the greater began at Eleusis on the fifteenth day of Böedromion, the third month of the Attic year, and lasted over nine days. The eighth day was called Epidauria, in honor of Æsculapius, who arrived on one occasion from his native city, Epidaurus, too late to attend the grand ceremonial of the sixth day. The Athenians, unwilling to disappoint so distinguished a benefactor of mankind, added a supernumerary day. In these sacred mysteries there were three stages of advancement, or degrees, which answered to the three scholastic degrees conferred by the universities in mediæval times. The candidate for medical honors, having passed a suitable preparation, was obliged to subscribe to an oath which was similar to that in use among the Pythagorians. At the completion of the term of study, the ceremony of coronation took place and corresponded to the modern graduation. It was an evidence of the recipient's fitness for assuming the duties of the profession, and conferred upon him the privileges of fellowship and the right

[10] Gruter: De Lucrementis Artis Medicæ per Expositionem Ægrotorum in Vias Publicas et Templa. Lipsiæ, 1749.

[11] Friedländer: Vorlesungen über die Geschichte der Heilkunde, Leipzig, 1839.

[12] Gauthier: Recherches Historiques sur l'Exercice de la Médicine dans les Temples. Paris, 1844.

of initiating others. The ceremony of placing a wreath, cap or crown upon the heads of those who were admitted into full fellowship in these ancient schools was continued down to the middle ages, and was the usual form of admission at Salernum, the earliest of the mediæval schools of medicine.[13]

In accordance with the custom of that age, Æsculapius transmitted his profession to his sons, Machaon and Podalirius, who were as skillful in the sciences and in eloquence as in the healing art. Machaon and Podalirius belong equally to history and mythology, and their biographies are a mixture of probable and fabulous narrations. Their existence cannot be doubted, for the Homeric songs and other ancient writings represent them as skillful physicians and valiant captains, who took an active part in the siege of Troy; but the statement of their genealogy does not admit of the same confidence. They are said to have been the sons of Æsculapius, while we know that there are grave doubts as to the existence of this celebrated individual, and besides, the words, "children of Æsculapius," are often used figuratively by ancient writers to designate members of the medical profession.

Machaon, who was regarded as the elder of the two brothers, must have been skillful in dressing wounds, if we may judge of the value which was placed upon his services by the Grecian army from its anxiety to have him properly cared for when he was wounded in the shoulder by a dart. "O, Nestor, pride of Greece (cries Idomeneus), mount, mount upon thy chariot and let Machaon mount with thee! Hasten with him to our ships, for a warrior who knows, as he does, how to relieve pain and cure wounds, is himself worth a thousand other heroes."[14] This renowned hero was killed by Eurypylus in single combat under the walls of Troy.

Podalirius survived his elder brother and assisted in the ruin of the kingdom of Priam, but on the voyage homeward he was shipwrecked and cast upon the coast of Caria, where he was rescued by a shepherd. Learning that he was a physician, the shepherd conducted him to the king, Damætus, whose daughter had fallen from the top of a house and was insensible. This skillful surgeon bled her and saved her life, this being the first recorded example of blood-letting.[15]

The sons of Æsculapius were both surgeons, as witness the lines of Homer:

> "Of two famed surgeons Podalirius stands
> This hour surrounded by the Trojan bands;
> And great Machaon, wounded in his tent,
> Now wants the succor which so oft he lent."
> —*Iliad*, lib. xi.

The other members of the family of Æsculapius are all fictitious beings whose symbolical names remind us of some attribute in medicine. Thus the name of Epion, his wife, means to quiet; those of Hygeia and Panacea, his daughters, express respectively health and a remedy for all diseases. Many of the gods and goddesses of Olympus fulfilled medical functions. Apollo, or Phœbus, the father of Æsculapius, assumed the privilege of preventing or causing epidemics, and Juno was said to preside at accouchments, at which times she was called Lucina, Ilithyia, or Natalis.

It is in the immortal poems of the Iliad and the Odyssey that we find the only certain traditions respecting the state of medical practice in Greece prior to the time of the Peloponnesian war. From these writings it appears that the profession of medicine and surgery constituted a kind of sacred occupation, the practice of it belonging only to privileged persons, and that in the armies, the highest princes gloried in dressing the wounds of those who had fought the battles of their country. From these poems we learn that the duties of those who devoted themselves to the divine art were mainly confined to the dressing of wounds, and that the imaginary power of enchantment was joined with the use of topical applications. The priests of India, the physicians of China and Japan, and the jugglers of the savage or half-civilized tribes of the old and new worlds, constantly associate, with drugs and manual operations certain mysterious rites and practices, upon which they especially rely for the cure of their patients. Such doubtless was the character of medical practice among the Greeks in the remote times.

The heroes engaged in the Trojan war evidently understood the means of arresting hæmorrhage. Homer, in describing the treatment of the wound of Eurypylus by Patroclus, says:

> "Patroclus cut the forky steel away;
> Then in his hands a bitter root he bruised;
> The wound he wash'd, the styptic juice infused.
> The closing flesh that instant ceased to glow,
> The wound to torture, and the blood to flow."
> *Iliad*, lib. xi.

Eurypylus, when asking the professional services of his friend, thus addresses him:

> "But thou, Patroclus, act a friendly part,
> Lead to my ships, and draw this deadly dart;
> With lukewarm water wash the gore away;
> With healing balms the raging smart allay;
> Such as sage Chiron, sire of pharmacy,
> Once taught Achilles, and Achilles thee."
> *Iliad*, lib. xi.

It is to be regretted that we have so little information regarding the political condition of the physicians of Greece. All that we know has been gathered from a few obscure passages in various writers. In a State so polished as Athens, the physicians would necessarily be subjected to certain laws. Plato seems to insinuate that at his time the physicians of Greece, as formerly those of Egypt, directed the treatment of diseases according to certain formulæ and precepts marked out for them, and that they were responsible to the state for all deaths caused by their negligence. A passage in Xenophon also proves that the young men, before establishing themselves on the territory of the republic of Athens, were obliged to ask permission, in a public discourse, in which they explained their previous education and practice.

Anatomy could not be studied by the Greeks be-

[13] Watson: The Medical Profession in Ancient Times. New York, 1856.
[14] Iliad, lib. xi.
[15] Sprengel: Erster Theil, p. 106.

cause they condemned, and regarded as a crime worthy of great punishment, all conduct towards the dead which was contrary to public prejudices. These prejudices had their origin in the belief that the soul, when freed from its earthly covering, was forced to wander on the banks of the Styx until the body was buried or cremated. Hence the celerity with which sepulture was performed on the dead to insure the rest of their souls, the duty imposed on all travelers of covering the dead bodies met with, the religious respect in which the burial spots were held, and the severe punishments inflicted on all who dared to profane them.[16] The extreme veneration in which the dead were held may well be illustrated by the following incident: In the twenty-sixth year of the Peloponnesian war (406 B. C.), Callicratidas, who succeeded Lysander as the admiral of the Lacedæmonian fleet, was defeated by the Athenians in a sea fight off the Arginusæ islands. At least a dozen Athenian vessels were left floating about in a disabled condition after the battle; but owing to a violent storm that ensued, no attempt was made to rescue the survivors, or to collect the bodies of the dead for burial. Eight of the ten generals were summoned home to answer for their conduct; six of them obeyed and were denounced by the Assembly, sentenced and compelled to drink the fatal hemlock. Socrates alone defended them, but his eloquence was in vain when pitted against the deep-rooted prejudices of the people.[17] Even during the Trojan war it was customary to declare a truce to allow the dead to be burned:

> "Next, O, ye chiefs! we ask a truce to burn
> Our slaughtered heroes, and their bones inurn;
> That done, once more the fate of war be tried,
> And whose the conquest, mighty Jove decide."

Scanty and imperfect as is our knowledge of the state of medicine in the age of Æsculapius, after his death and that of his sons, we have a long period extending over several centuries, during which we have still less information respecting the history and progress of the art. We have not a single improvement of any kind recorded as having taken place during this interval, nor have we the names of any individuals handed down to us who were of sufficient eminence to be distinguished above their contemporaries. We learn that the practice of medicine was entirely in the hands of the Asclepiadæ, and that the temples were gradually converted into schools of medicine, among the most celebrated of which were those at Cos, Cnidus and Rhodes.

The priests connected with the two rival establishments at Cos and Cnidus devoted their attention, from the outset, to different objects; those of the former asclepion assumed more of a philosophical caste, attempting to unite reasoning with experience, while the latter devoted themselves solely to the observation and collection of mere matters of fact. Hence it would appear that thus early in the history of our art a foundation was laid for the two great sects, the Dogmatists and Empirics, which long divided the medical world. The priests in the temple of Cnidus professed to depend on experience alone in the treatment of disease. They argued that if reason taught differently from experience, it was injurious, but if it taught the same it was unnecessary. Thus the very source of medical teaching was contaminated with the germs of sects and systems.

Several centuries elapsed during which the Asclepiadæ religiously adhered to the traditions of the Egyptian school, which allowed them to transmit their doctrines only to the members of their caste and to such strangers as fulfilled satisfactorily the initiatory tests. Under the control of the priesthood, medicine had remained stationary when, at last, it began to be cultivated by a class of persons much more likely to produce improvement, and from whom, in truth, it received its first impulse. Previous to the time of the philosophers, medicine had been exercised for the most part for the purpose either of direct emolument, or for the still more selfish purpose of maintaining the influence of the priests over the minds of the people. And, indeed, it was time that things were changed. The era of brute force, of hand to hand conflicts with monsters and brigands, had passed away, and the reign of intelligence, of strategy in war and politics, had become conspicuous. The mythological heroes whose labors were so much boasted such as a Perseus and a Bellerophon, were succeeded by those great men whose names have been justly celebrated in history, as Leonidas, Miltiades, and Themistocles. Long before the Asclepiadæ revealed their knowledge of medicine, and previous to the dispersion of the philosophers, the art of healing was extensively practiced in the gymnasia. Of the physicians connected with these establishments, there were three orders: the gymnasiarchs, who regulated the diet of the athletes; the gymnasts, to whom was intrusted the medical treatment of the sick; and the jalaptres, whose duties were mainly surgical.

The revolt of the Pythagorians at Crotona was an event of great importance in the history of medicine, for it was followed by the disruption of the sect and indirectly contributed to the advancement of our science. When the storm of persecution had driven the philosophers into different parts of Greece, many of the members being no longer under an obligation of secrecy, revealed the workings of the order, taught publicly the art of healing, and thus originated the general practice of medicine. About 440 B. C. Metrodorus, a former member of the Pythagoreans, exposed their secrets, and set himself up as a teacher of medicine. About the same time the practice originated among physicians of migrating from place to place and of making a public declaration of their skill. The same custom prevails to-day among us, who are supposed to far exceed the ancient Greeks in wisdom and judgment. The people of antiquity called these itinerant physicians periodevtæ, while the moderns name them charlatans.

When the disciples of Pythagoras had revealed the secret of their mysteries, and the philosophers had dared to teach and discuss publicly the principles of morals, physics and theology; when the itin-

[16] Sprengel: Geschichte der Arzneikunde, Erster Theil, p. 141, Halle, 1792.
[17] Wm. Smith: History of Greece, p. 366.

erant physicians and professors of the gymnasia had acquired the confidence of the public, the priests of Æsculapius could no longer keep silence, under the penalty of seeing the sceptre of medicine, which they had held till then, depart from their hands. They were forced to bring to the light of discussion the principles and rules of their medical practice. It was in this manner that our science came forth at last from the shadow of the sanctuary.

The priests who served in the temple of Cnidus were the first to follow the impulse of the age, and they issued a small repertory of medical facts called the "Cnidian Sentences." These are said to have been written by Euryphon,[18] a contemporary of Hippocrates. The Asclepiadæ of Cos were not slow to follow their example, and they published a series of treatises which, at a later date, were collected under the name of the "Hippocratic Works." This production, which overshadowed all other medical publications at that period, constitutes one of the most precious monuments of ancient medicine.

Thus it was that the spirit of medical inquiry outgrew the confines the temples which, long after medical instruction had ceased to be given in them, remained the strongholds of religion and still maintained their ancient mysterious ceremonies. The asclepion of Cnidus is known to have been in existence down to the time of Constantine, by whose command, in common with other relics of paganism, it was razed to the ground. The Asclepiadæ of Cos gradually lost their influence over the multitude; their sacred groves and fountains were forsaken; and, at length, during the lifetime of Mark Antony, the Roman prefect, Turullius, regardless of the divinity which had once ruled within the precincts of its hallowed shade, cut down the groves and of the timber made his ships. Such was the fate of those noted temples of medicine. Although long since destroyed, they have left an influence upon our art which will last as long as time itself. It was from this family of priest-physicians, the Asclepiadæ, that Hippocrates, the Father of Medicine, was descended.

THE THERAPEUTIC VALUE OF OXYGEN.

With Reports of Cases Treated.

BY SAMUEL S. WALLIAN, A.M., M.D.,

OF NEW YORK.

Regarding the availability and applicability of factitious oxygen as a therapeutic agent, there has prevailed, and still prevails, a very general professional misconception. This stereotyped estimate is based on the reports of early investigators, particularly those of Lavoisier, who asserted that his birds, dogs, rabbits and guinea-pigs, when immersed for a short time in an apartment or receiver filled with crude oxygen gas (derived from and doubtless tainted by the bungling decomposition of an oxide of mercury,) became excited and preternaturally lively, which condition was followed by more or less physiological depression. Considering the crude state of chemical science at the time, and the questionable processes employed, it is easy to understand that these results were not necessarily attributable to the newly discovered gas, the nature of which was being eagerly and none too honestly investigated. These hasty and superficial impressions seem to have been accepted without question and without satisfactory verification; and, what is more surprising, they have ever since remained as accepted dogmas in the world of physiological chemistry. In the century that has since elapsed chemistry and physiology have both been revolutionized; but with all the progress made in this direction few text-book authorities have thought it worth while to investigate from a fresh standpoint, or to disturb the fossiliferous strata of scientific thought handed down from the latter end of the eigteenth century.

The later French and German authorities have not added much to our knowledge of the agent, their experiments partaking more of the brilliantly curious than of the practical form. Some of them have shown, at least to their own satisfaction, that there is a saturation point of the blood beyond which it refuses to absorb any more oxygen; overlooking the imminent and practical fact that the average human being, living under ordinary civilized circumstances, seldom approximates the saturation point; and that ordinary mortals are in about as much danger of being translated as of damaging themselves by an excess of the vital element in question. To this dead-level of authorities there are a few notable exceptions. Phillips cautiously, but convincingly, combats the prevailing misconceptions, and our own Dalton refutes many of the absurd conclusions which had so long prevailed. It is now known that the decarbonization of the blood is not the principal office of the oxygen derived from atmospheric inspiration. The experiments of Magnus show that from ten to twenty-five per cent. of the oxygen inspired by a human adult is absorbed directly and in a free state, into the blood. The affinity of blood, arterial as well as venous, for oxygen is shown to be very great. Compared with that of water the ratio is as 2½ to 1. This is doubtless the key note to the action of oxygen, therapeutically exhibited.

Dalton has shown that the carbon dioxide constantly exhaled by all animal bodies is not all formed by contact of the circulating fluid with the oxygen of the air. *It already exists in venous blood before it reaches the lungs.* Hence, it is constantly being formed in the tissues themselves, as well as in arterial blood; since the same authority shows that both carbon dioxide and free oxygen exist in arterial blood. According to Magnus there is a nearly constant relation between them, the mean proportion being, by volume, as 10 to 25 in arterial, and as 10 to 40 in venous blood. If these premises be accepted, and no one has as yet disputed them, carbon dioxide is not, as generally taught, wholly the product of respiration. No doubt a small portion of that expired is formed at the moment of contact of atmospheric oxygen with the carbon-loaded blood as it reaches the air-cell, but more of it already exists in the circulating fluid. The venous system is thus seen to be a col-

[18] Schulz: Historia Medicinæ, p. 148.

lector of waste products—the complete sewerage of the vital economy. In the pulmonary circulation oxygen is freely and promptly absorbed, and carbon dioxide given off, while in the systemic circulation oxygen disappears and is constantly being utilized in the various processes of reconstruction.

It is evident that the ancient assumption respecting vital combustion is very imperfect as an explanation of the office of oxygen. In fact, modern physiologists have proved that the whole theory of heat production in the animal system, considered as a direct result of combustion, is lame and unsatisfactory. It is a well known law of physics as well as the result of common observation that slow oxidation is not the source of any considerable degree of heat, and vital caloric has another explanation than that of the combustion of carbonized material within the system.

What becomes of the 10 to 25 per cent. of oxygen so constantly absorbed by the blood? Is its office to supervise the general processes of metamorphosis, without which the animal cannot exist? Does it preside alike over digestion and assimilation, and does the absence of it render possible all the various forms of mal-assimilation, including those which result in glycosuria, lithæmia and the various diathesis—even the tubercular? Does it incidentally, here as elsewhere in nature, intercept toxic tendencies, destroy septic and putrefactive germs, prevent degenerative changes and retard or render inert the slowly forming elements of malignant growth? Is it used in the end as an essential *materia elimentaria?* These are questions which have been asked, which are, in fact, constantly being insinuated by science, but have been as yet only empirically rather than satisfactorily or scientifically answered.

A large class of physicians at the present time flippantly dispose of the question of the therapeutic value of oxygen by citing the current saw about the saturation of the blood. They repeat that scientific stupidity which assumes that the free oxygen in the blood cannot be increased beyond the limited quantity which it constantly and readily receives from the ordinary atmosphere; and hence. that any attempt in this direction is not only uncalled for but practically futile. Granting that this assumption is true, the objection practically falls flat. If the human race could be turned adrift, in a body, and should lapse into the primitive life of nomads, it might be feasible for each individual to realize his due quota of the vitalizing element. Unfortunately civilization implies a sort of human hibernation, and the average modern individual is compelled to eke out his disease-pestered days on one-half this allowance, or even less. The result is inevitable. Functions are imperfectly and incompletely performed; changes and metamorphic processes, though initiated, necessarily flag and result in half formed tissue, or in products inimical to the healthy organism. Toxic, carbonaceous elements accumulate, degenerative processes are set up, and chronic disease is the inevitable result, if even malignant demonstrations do not end the disastrous history.

These are homely facts, and they have no glamour of superficial laboratory erudition or bacillus-staining to give them mock dignity. Nevertheless, they appeal to the hard common sense of every practitioner of medicine who realizes how helpless he is to relieve the many and multiplying forms of disease, constantly being analyzed by the aid of the scalpel and the microscope, with a minuteness of detail which is fairly bewildering, and which are the direct or remote results of this universal oxygen famine.

Inspired oxygen passes in a free state into the arterial blood and is distributed throughout the entire system, thus coming into intimate contact with every remotest tissue and cell. Keeping in view this fully admitted fact, how can its ultimate influence on the vital economy be estimated? It would be a waste of time to prove that the blood can and does, under certain circumstances, absorb an unwonted increment of oxygen, since as already asserted, a large majority of the race live under conditions which positively prohibit the utilization of anything like a normal supply. That medical mountebanks have made capital out of the word oxygen is no concern of ours. They did the same for electricity, for hydrotherapy, movement cure, and massage; which, once extolled as panaceas, are now universally recognized as valuable and sometimes indispensable allies. But in spite of drawbacks in the shape of prejudice, time, care in manipulation, and expense, the medical use of oxygen and its principal ally *nitrogen monoxide*, is steadily on the increase. A large number of reputable practitioners in this country are quietly experimenting with these agents, and carefully noting results. Abroad there is even more interest shown. The subject is yet without a literature, but materials and data for this was steadily accumulating. Lately, Dr. Powell, of this city, read a suggestive paper before the New York Academy of Medicine on the use of ozone in phthisis. The February number of the *South-Western Medical Gazette* has a short paper on the subject, by Professor F. C. Wilson. The *London Lancet*, of recent date, contains a short, but pertinent paper on the remedial value of oxygen. Thus, a slow but steady progress in this direction is being made.

It is evident to the most casual observer that the medical science of the future must be largely based on a study of natural therapeutics. The artificial, and far fetched are daily losing caste. The profession long since lost faith in dispensatory routine, and the lay public is gradually becoming infected with the same skepticism. The heyday of pharmacomania has passed and the inevitable reaction has already set in. The routinists no longer take front rank. They must henceforth become the rear-guard and camp followers of the army of progress. Without realizing it the profession is quite generally commending oxygen. Every patient sent on a sea-voyage or to the mountains, is a walking certificate as to its efficacy. Every argument in favor of open air life, roughing it on the plains, a sojourn in Southern California, Italy—in short all travel, is a plea for oxygen. Many of the newer antiseptics and parasiticides have been found to depend on free oxygen liberated during decomposition within the system, or

in contact with the tissues The terebene group may be cited as an example. Theories, however, are not so important as clinical facts. A few brief sketches of further cases treated are appended:

Case 21.—Mrs. S., age 32, suffering from chronic gastric catarrh of unusually severe type. After six weeks daily use of oxygen (modified and diluted,) together with hot water drinking—very little attention being paid to her diet—she fully recovered, and became more robust than for many years.

Case 22.—Mrs. C. R., age 63. Suffered some years since with spinal meningitis and has never fully recovered. Convalescence was followed by epileptoid convulsions and hysterical phenomena of various kinds. At present is subject to paroxysms of dyspnœa, simulating œdema of the lungs. Each paroxysm it is thought will prove fatal. Modified oxygen was carried to the bedside in rubber bags, twice daily, and during the intervals the patient was kept supplied with a solution of hydrogen dioxide which was vaporized and inhaled.

This treatment was continued for three weeks, with the gratifying result of clearing up the lungs, removing the dyspnœa, and greatly aiding the digestion, which had become seriously disordered. Nor was there any relapse on leaving off the remedy. This patient died six months later from degeneration of the cord, (at least so reported by the attending physician) the dyspnœa not having returned.

Case 23.—P. E., age 22. Subject to periodic headache of so severe a type as to have injured his memory and caused ocular troubles. The paroxysms are generally a true migraine and of fairly explosive violence. They recur from once to three times per week quite regularly. Placed this patient on a mixture of O, N_2O and common air, viz.:

℞. O, two volumes.
N_2O one volume.
Common air three volumes. M.

Of which two to four gallons were inhaled night and morning.

Two weeks treatment greatly relieved the paroxysms, and in four weeks patient assures me he is no longer troubled. The head is cool, the eyes clear, and the paroxysms do not now recur.

Case 24.—Miss W. M., age 24, teacher. Has severe and constant cough, with "soreness" of the lungs, loss of appetite and general malaise. Is very much frightened lest it be already incurably seated "consumption." The family history is not favorable.

October 20.—Not being able to come to the office for treatment, is placed upon the daily use of the portable variety. Continuing the inhalations carefully night and morning for four weeks, she reports that her cough is gone and appetite excellent. The soreness no longer troubles her, and she has given up "dying of consumption" for the present.

Case 25.—Mrs W. A., age 62. Has been for years subject to constant neuralgia—trifacial—of the most aggravated form, accompanied by severe chronic dyspepsia. Stomach tolerates very little food of any kind, and her sufferings are agonized in the extreme. It is hardly thought that treatment will do much for her, especially since her circumstances do not permit the most efficient form of office treatment. Contrary to expectation, the thorough use of the portable form of oxygen four times a day is followed by marked and immediate relief of the paroxysms. The digestive system also promptly responds, and within a week or ten days she is enabled to partake of nourishing diet, and to digest it. In connection with the inhalations this patient is directed to take internally, of the 15 volume solution of hydrogen dioxide, a teaspoonful, well diluted, before each meal.

This treatment is still being followed and improvement is steady in all directions.

491 West Twenty-Second Street.

A REMARKABLE RESULT FROM AN OPERATION FOR STRANGULATED HERNIA.

Read before the Wayne County (Indiana) Medical Society.

BY S. S. BOYD, M.D.,

OF DUBLIN, IND.

On May 17, 1886, I was called to see John Leeson, aged 52 years, who was suffering from direct strangulated inguinal hernia of the right side. The tumor below the ring was about five inches long and two inches thick. The symptoms which ordinarily accompany strangulated hernia, such as intense pain, sickness and vomiting, being absent, and as I had, two months before, reduced a similar strangulation in the same patient, of four days' standing, by taxis after anæsthetizing with ether, I thought it safe in this case to make an effort at reduction by the same means. Being assisted by Dr. H. B. Boyd, we had the patient placed on a broad board, which was inclined at an angle of about thirty degrees from the horizontal, with his head downwards, his head and shoulders being supported by pillows, I resorted to the usual manipulations. After pursuing this course three and a half hours we abandoned the effort in that direction.

Dr. C. N. Blount was then called in consultation, when we concluded, as the symptoms were still not urgent, to try the topical application of ice. During the next eight hours blocks of ice of about a lb. weight were continuously applied over the tumor, and warm water enemata frequently injected into the bowels during the same period. That night a slight nausea was developed, though there was little pain or other unfavorable symptoms. The pulse, which had not been over 80 per minute, was not increased, and the temperature did not rise above 100°.

On the morning of May 20, the fifth day after the strangulation occurred, believing that without the use of the knife the obstruction would not be removed, we determined on an operation. When the sac was opened it was found to contain omentum only. The distal end of the contained omentum was dark, but not gangrenous. But, in accordance with later teaching on that subject, and from the fact, as we believed, that omentum which has been strangulated over four days will not likely have its circulation restored if returned to the abdomen, we decided to ligate and excise it. We therefore ligated the protruding omentum

in four parts, as near the point of stricture as possible, then incised the omentum as near the ligatures as practicable, and after enlarging the stricture, we returned the stump into the abdomen. After placing three deep sutures in the wound, the usual dressing completed the operation. The removed omentum weighed nine ounces. It was about four inches long and one and one-half inches thick, and nearly round, being a little larger at the proximal end.

On the 21st the patient was resting well; pulse 100, temperature 100°. On the 22d the pulse was 110, temperature 100. Pulse and temperature declined from last date until the 27th, when warm water enemata were freely used. On the 28th, after having removed, mechanically, a large amount of impacted fæces from the rectum, the bowels were freely evacuated. On the 29th the temperature rose to 102°; pulse to 100, but both fell back to nearly normal during the next three days.

Up to this time the patient had been nourished entirely on milk diet. After this a little bread was added to his three meals per day.

On June 6, seventeen days after the operation, the patient passed per anum one of the ligatures used in ligating the protruding omentum above mentioned, and at the same time there was found in the stool of the patient a piece of what was supposed to be a part of the omentum devoid of its fatty substance. The pulse and the temperature again rose to 100, but fell back to normal the next day. Three days later another one of the four ligatures used in the operation was found in one of the patient's stools.

At no time during the treatment of the case did the patient suffer much pain; and there was but little swelling of abdomen. Opium was freely used from the time of the operation until the patient was considered out of danger. It is now nearly nine months since the operation, and the patient is well and pursuing his occupation as a farmer.

UNUSUAL CARDIAC ANOMALY.

BY A. M. HAYDEN, M.D.,

OF EVANSVILLE, IND.

I wish briefly to record a case of cardiac anomaly which is altogether different from any case that I have ever seen, and so far as I can find there is no similar case on record. The case is as follows:

I was called to see the child when one week old. I found it fairly well developed, weighing eight or nine pounds, with more or less incomplete, though marked, cyanosis. Breathing was labored, and there was a slight cough. I made a diagnosis of non-closure of the foramen ovale, and gave an unfavorable prognosis.

I was superseded by a physician of considerable reputation, who pronounced my diagnosis incorrect.

Thirteen months later I was again called to see the child. I found that it had grown but very little, and was much emaciated, not weighing more than ten or twelve pounds. It was suffering with a well-marked case of chronic bronchitis, mucous râles being distinctly heard on both lungs. I now concluded that I was mistaken in my former diagnosis, as the child was not cyanosed, the skin having regained its normal color. I treated the case for bronchitis.

Heard nothing more from case until a few days ago, when I was called on to make a post mortem examination, the child having died from the effect of disease at the end of the sixteenth month.

Autopsy revealed chronic bronchitis, with hepatization of lower lobes of both lungs. Heart enlarged. Hypertrophy of walls of ventricles. Foramen ovale pervious. Right auriculo-ventricular foramen normal. Left auriculo-ventricular foramen normal. Foramen one half inch in diameter connecting right and left ventricles. Auricles slightly dilated. *The pulmonary artery took its origin from both right and left ventricles*, the cavity of the artery dividing in the wall of the heart into two equal parts, one terminating in each ventricle. The aorta took its origin from left ventricle, and seemed to be normal. The pulmonary veins emptied into left auricle.

I report the above case with the hope of eliciting comment, both as to the probable cause of the condition, and as to the manner in which the circulation was carried on so as to sustain the life of the child for sixteen months. I would also like to hear of any similar cases, if there be any on record.

Evansville, Ind., December 17, 1886.

MEDICAL PROGRESS.

Treatment of Hernia by Subcutaneous Injection.—At the meeting of the New York County Medical Society on December 27, Dr. W. B. De Garmo gave a brief history of the treatment of hernia by methods purporting to be subcutaneous, the object of all of which had been, up to the time of the publications of Heaton's method, to cause obliteration of the hernial sac. Heaton had been practicing his method, and obtaining many cures, since 1843, but he refused to make it known until 1877. Heaton made no attempt to destroy the hernial sac; the whole object of his operation was to so fortify the fibrous tissue surrounding the canal that protrusion would not occur. His method stood alone; it differed in every way from previous methods of subcutaneous treatment; the fluid injected was astringent and mildly irritant, and its action was brought to bear upon the muscular and tendinous structures of which the inguinal canal was composed, and upon the connective tissue which bound these layers together. That improvement and practically cures would result from injections of this oak-bark solution the reader had had abundant evidence, and he could also state that it was practically without danger, at least when correctly employed. Several years ago he stood almost alone in indorsing the method, but since then it had been adopted by many others. That frequent failures had occurred was beyond question. To throw light upon the cause of some of the failures was a principal object of the paper.

In the first place, too much had been expected of the operation, and this was in great part due to the manner in which Heaton placed it before the profession. It was quite natural that he, after so large an experience, should have met with greater success than the general operator. Then the method had been put to unfair tests. For instance, he had known patients to be allowed to go about immediately after rising from the bed, seven or ten days after the operation, without any support. They had even been instructed to cough or strain in order to test whether or not the hernia would recur. A second error was the anticipation of a cure in old herniæ by a single injection. In these herniæ the sac was largely dilated and the canal shortened, and there was a funnel-shaped opening at the internal ring —conditions most favorable for the protrusion of the hernia—and it was very necessary to continue wearing a support. It was cases of oblique inguinal hernia of recent date, in which but few pathological changes had taken place, that were most readily cured by this method. That many errors had been committed in the performance of the operation he had abundant evidence. One error in operating consisted in puncturing the scrotal tissue invaginated by the finger, instead of inserting the needle directly into the canal. In order to enter the canal without injuring the cord he deflected this for convenience to the outer side, instead of to the inner, as advised by Heaton. Immediately and for some moments after withdrawing the needle he made firm pressure over the point of entrance to prevent the return of the fluid in the track of the needle. Some English surgeons laid the sac open and smeared it with the fluid, but there was nothing to be gained by this method, while it added danger. The reader had never observed abscess develop from subcutaneous injection. He employed a particular syringe to make the injections. The subsequent management of the case was as important as the manner in which the operation was done. The strengthening of the walls of the canal was a slow process, and not to wear a support, at least for some time after the operation, was only to invite a return of the hernia. On the other hand, too firm pressure was to be avoided as tending to weaken the tissues which it was desired to strengthen. The patient should be confined a week or ten days, and longer in extreme cases. He had usually employed during this time the bandage devised by Heaton. Last March he had called attention to a modification of Heaton's method which he believed to be important. It consisted in making repeated injections of a small quantity of the fluid when the patient had to continue at his business, and causing him to wear a truss in the meantime. His conclusions from seven years' experience with Heaton's method, during which time he had employed it in over a hundred cases, were: 1. That it was free from danger. 2. That over 45 per cent. of all cases could be cured by it, and in select cases 50 to 75 per cent. 3. That many extreme cases uncontrollable by means of a truss could be brought under control by the operation. 4. That it was followed by improvement in almost every instance. 5. That children not cured by mechanical means could in almost every instance be cured by Heaton's operation.

Dr. R. F. Weir said that the last time he looked over his records he had performed Heaton's operation seventy or eighty times, and the proportion of cures was between one third and one-half—nearer one-third than one-half. At first he had made some of the errors in operating mentioned by Dr. De Garmo; in one instance he had inserted the needle so far as to inject some of the fluid into the abdominal cavity and set up inflammation. The patient died some months later from another cause, and at the autopsy there was evidence of his having injected the fluid into the omentum. He employed Heaton's bandage sometimes, but he preferred superimposed strips of adhesive plaster. Where the hernia was large, he thought the open method was the better. In general, his experience confirmed the views of the author.—*New York Medical Journal*, Feb. 19, 1887.

Artificial Abortion by Evidement.—In the *St. Petersburg Med. Wochenschrift*, No. 45, 1886, Weidemann, of St. Petersburg, calls attention to a plan for rapidly emptying the pregnant womb, that in the two cases in which he has used it has proved eminently safe, prompt and in every way satisfactory. A case of incessant vomiting of pregnancy, in which he had had great trouble in inducing abortion once before, caused him to study anew the various means for producing abortion and to try to find a safer and prompter method than the ones usually employed. The case was as follows: A woman, æt. 26, applied to his clinic in December, 1885, for relief from incessant vomiting. She had given birth to five children, without any complications except some moderate vomiting during her pregnancies. One year before, being again pregnant, vomiting became incessant and refused to yield to treatment. At that time Wiedemann had induced abortion. He had dilated the cervical canal with sponge tents, introduced the sound, perforated the membranes, and made hot vaginal douches every four hours. Although these procedures had been repeated daily for six days, they merely brought on pains lasting for several hours. On the sixth day he had chloroformed the patient and had scooped out the contents of the womb with the Simons' curette, though not completely, for after twelve hours hæmorrhage with pains set in and some shreds of placenta came away. Although he had been careful to work antiseptically, an endo-parametritis gave rise to fever for a week. She is now again two months gone in pregnancy, and the vomiting again refuses to yield to treatment, even the much-lauded cocaine fails of action. She is rapidly sinking, her pulse is 120–150, and the temperature is subnormal. The patient's condition being so low, his previous experience having shown that her womb reacts so badly, and the chance for infection being so great, made him adopt a method by which he could empty the uterus of its contents more promptly.

Thinking that the condition of the womb during the early months of pregnancy must be similar to that of placental polipi, which we are in the habit of

treating by forcible dilatation and curettement, he concluded to empty the womb in this manner. Accordingly, on December 23, 1885, the patient was chloroformed, the parts disinfected with corrosive sublimate solution, and the womb drawn down with vulcellum forceps. The cervical canal being dilated to admit the index finger by means of Fritsch's dilators, the fœtus and its adnexa were removed with Martin's spoon, and under continued irrigation with thymol solution all parts of the placenta and the decidua were completely taken away. Hæmorrhage was very slight and ceased with the completion of the operation. Time from beginning of the dilatation to complete removal of the ovum and its membranes, twenty minutes. It was not possible at this stage of pregnancy to remove the ovum in toto, for on account of the length of the cervical canal his finger could not be carried up to the fundus uteri. The lying-in was normal in all respects. No fever, the pulse rapidly became lower, the vomiting stopped at once, subinvolution progressed normally, the lochia were serous by the second day and ceased by the ninth day, when the patient was dismissed with much improved strength. As a matter of interest, he would add that four months afterwards he was asked by the woman to again perform abortion on her, but refused her, as he could find no indications for the operation.

On May 6, 1886, abortion was performed at his clinic by the same method on a married woman, æt. 23, pregnant twelve to fourteen weeks, who had a contracted pelvis with a conjugata of 6.0 cm., and who refused to have abdominal section performed at term. The operation was as successful as the first, duration twenty minutes, very slight hæmorrhage, lying-in normal.

Wiedemann thinks that the method recommended by him, forced dilatation in narcosis and èvidement of the ovum, has not heretofore been used for the purpose of interrupting pregnancy, and hopes by this report to induce his colleagues to give it a trial, for he believes that this operation, so frequently employed for other purposes, should be especially adapted to produce artificial abortion, as it is simple, rapid and safe, and enables us to avoid many of the dangers of abortion.

Infant Feeding.—Soxhlet starts from the premises that milk in the glands is free from germs, as shown by Eister and Escherich, and that the germs that give rise to fermentation enter the milk after it has been taken from the glands. He finds the reason for the fact that infants thrive on mother's milk, and are so apt to suffer from digestive troubles and to lose ground when fed on cow's milk, not in the slight difference in the chemical constituents of the two milks, but in the manner in which they get to the child, the former direct from the breast, the latter only after it has had all opportunities to become contaminated with impurities and fermentative producing causes. To avoid this danger when it becomes necessary to feed an infant on cow's milk, he advises that it should be *sterilized* as soon after milking as possible. To accomplish this the milk should be put into bottles, closed with rubber stopper through which a hole is pierced, the bottles placed in a vessel with water, and heat applied. As soon as the milk in the bottles has expanded to its highest degree, a well fitting glass plug is inserted into the hole in the cork, and the water is then made to boil for thirty-five to forty minutes. This may be repeated two or three days, and *such milk may be kept in a cool place for three or four weeks without turning acid.* Before using the milk the bottle is placed in a vessel with water and heated to 97½–98½° F., the stopper is removed and a clean nursing apparatus is attached to the bottle. Milk left over and milk in open bottles must not be fed. The bottles and nursing apparatus must always be kept scrupulously clean. Soxhlet affirms that he has evidence to prove that milk preserved in this manner does not exert the least injurious influence on the infant's digestive tract, and that thus one of the main obstacles to infant feeding is obviated.—*Memorabilien*, Hft. 4, 1886.

Inoculation of Tuberculosis in a Child.—The custom of the Jews of sucking the wound after circumcision, the sucking being done by the operator, by a relative, or by an acquaintance, has frequently given rise to syphilitic infection of the child, and many such cases are on record. On the inoculation of tuberculosis in this manner we have only the communication of Lindmann (*Deutsche Med. Wochenschr.*, 1883, No. 30, ten cases), and that of E. Lesmann (*Deutsche Med. Wochenschr.*, 1886, No. 9, et. seq., ten cases, all infected by one person). Elsenberg reports in *Gaseta Sekarska*, No. 18, another case, which is interesting because only the discovery of tubercle bacilli by the microscope enabled the observer to differentiate the affection from syphilitic infection, the surface of the ulcer being gray, the lymphatic glands greatly swelled and suppurating. The operator who had infected the child, to outward appearance seemed healthy, though he coughed a little. Tubercle bacilli were found by Elsenberg, in the operation, and also by Prof. Hoyer. Laryngoscopic examination revealed some true tubercles on a somewhat infiltrated base in the interarytenoid space.—*St. Petersburg Med. Wochenschr.*, 1887, No. 1.

Torsion of an Incisor Tooth.—Mr. Smale mentions in the *British Journal of Dental Science* the case of a boy, aged 8, who had the right upper central incisor twisted so that the mesial surface presented towards the lip. The tooth was grasped firmly by a pair of straight-bladed forceps and twisted into a good position, care being taken to press the tooth firmly into the socket during the operation. It was tied to the surrounding teeth with silk twist in order that it might not return to its old position. A week afterwards it was quite firm, the tooth could be tapped, and he could distinguish between hot and cold applications. There was no discoloration, and the gum was quite healthy. Torsion may be used freely before the patient arrives at the age of 12 years, and should be always done at one operation. It is only applicable to the incision.—*Lancet*, Jan. 20, 1887.

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The Editor of this Journal would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, MARCH 19, 1887.

THE PATHOLOGY AND TREATMENT OF EPILEPSY.

At a recent meeting of the New York Academy of Medicine Professor Wm. H. Thomson, of the University Medical School, read a paper on the "Pathology and Treatment of Epilepsy," based on notes of sixty consecutive cases in practice, in which he advanced some rather unusual views, among which was the opinion that all convulsive seizures of an epileptiform character, whether due to a temporary peripheral irritation or not, as convulsions from dentition, for example, really belong to true epilepsy.

Dr. Thomson regards *suddenness* as the invariable and essential element in epilepsy; it is the single truly sudden disease, the only affections resembling it in this particular being laryngismus stridulus and spasmodic asthma, though in these the suddenness is found not to be absolute as in epilepsy. Apoplexy, hemiplegia, sunstroke, etc., being accidents, cannot be strictly compared with epilepsy: nor are hysterical and neuralgic attacks so sudden as those of epilepsy. Furthermore, Dr. Thomson regards *petit mal* as the most real form of the disease. In regard to the cell discharge or explosion theory, the views of Hughlings-Jackson, and Nothnagel's "convulsive centre," he thinks that if no other form of epilepsy than *petit mal* had ever been observed the explosion theory would never have been proposed. With Jackson and Gowers he is willing to grant that there is a motor discharge in every convulsive seizure; but that it is a different matter to say that an attack of epilepsy is a motor discharge. He believes all motor phenomena except the voluntary to be under the control of sensory impulse, and a sudden suspension of the regulating sensory impression may result from a variety of causes. Any irregular motor phenomena are therefore due to a loss of the customary sensory influence; and this, he thinks, explains the clinical facts of epilepsy without the necessity of supposing any additional nervous force being called into action.

He considers the phenomena of epilepsy to be the effect of an afferent sensory impression when some abnormal condition of the nerve centres is present. What this condition may be he is not prepared to say, but it seems most probable to him that it is one of malnutrition. If asked if he would assert that all cases of epilepsy are attended with sensory impressions in the face of the well-known fact that in certain instances there are definite lesions of the brain present, he would reply that we do not get rid of the sensory element when we enter the cranial cavity. A syphilitic gumma of the brain may be as truly an excitant of sensory irritability as an external impression. He does not hesitate to acknowledge that a motor centre may be excited by the application of an electric current after trephining the skull; but the explanation of the phenomena noted he believes to be found in the fact of a wholly unaccustomed irritation in a centre habituated to act in response to sensory impressions. The hypothesis of a sudden suspension of the ordinary suspensory functions, he thinks, fully accounts for all the phenomena observed in epilepsy.

As regards his treatment of epilepsy Dr. Thomson says that of late years, since he has based his therapeutic measures on the hypothesis that the lesion of epilepsy is to be found in the sensory, rather than the motor, centres, he has grown much less skeptical of the advantages of treatment in this disease than formerly. The first thing to be aimed at is the improvement of nerve-nutrition; and by far the best agent for this purpose is cod-liver oil, which he prescribes as regularly in epilepsy as in phthisis. Phosphorus is also a useful remedy in this connection. Like the great mass of physicians, he has found the bromides the best agents for controlling peripheric irritation, and he has found cod-liver oil of very good service in counteracting their debilitating effects. When there is persistent cortical irritation, as indicated by muscular twitchings during sleep, he employs, with happy results, the bichloride of mercury, or the oleate by inunction. He uses belladonna or oxide of zinc in all cases in which the attacks show any connection with disturbances in the alimentary canal, and when there is reflex irritability he uses chloral hydrate or Hoffman's anodyne, in addition to the bromides. Digitalis he uses in all cases characterized by vas-

cular disturbance, or where there is involuntary discharge of urine during the attack. He is also in the habit of using, in a certain proportion of cases, a red pepper pack at night; 1 drachm of capsicum being used to the pint of hot water for this purpose. In one case a patient who ordinarily had two epileptic attacks a day did not have a single one for seven weeks after this measure was resorted to; the disease being completely arrested by the peripheral excitation thus secured. In his opinion, an important part of the treatment is the total exclusion of all butcher-meat for a period of two years; though poultry and fish are permissible. Animal diet, he believes, predisposes to convulsions in direct proportion to the quantity in which it is used. The tendency to convulsions in the carnivoræ, and the absence of this in herbivorous animals, are apparently due to the respective diet in each class. Another thing to be avoided is eating fast, as the too rapid mastication and swallowing of food seems to act directly on the convulsive centre of the medulla oblongata. It is possible that the habit of eating too fast may thus induce confirmed epilepsy. These points show, he thinks, the direction in which efforts should be made by which better results may be expected in the future, and the treatment thus be relieved of the grievous burden of suspicion which it has borne so long.

It could scarcely be supposed that such views as to the pathology of epilepsy could be expressed before the Academy without discussion. It may be questioned, as Dr. Putzel remarked, whether anything can be considered epilepsy unless the convulsive habit is established. But we cannot so certainly draw a line of demarkation between infantile convulsions and true epilepsy, as Dr. Putzel seems to think, as clinical experience shows that the tendency to convulsions in children is closely associated with the epileptic diathesis, and that accidental convulsions are often the beginning of lifelong epilepsy; and we also know that many cases of epilepsy give a history of convulsions in childhood. But a consideration of the pathology of epilepsy, and epileptiform convulsions, would carry us beyond the limits of this article.

With one exception it seems that Dr. Thomson's views as to the treatment of epilepsy were generally endorsed. Dr. Wm. H. Draper, however, did not agree as to the danger of animal food; on the contrary, he is inclined to think that the origination of an attack is more likely to follow the ingestion of starchy foods, and he prefers that his patients should use animal food and milk, and a diminished quantity of the carbo-hydrates; and from this he has had very good results.

At the same meeting of the Academy Dr. A. D. Rockwell read a paper on *The Value of Electricity in the Treatment of Epilepsy*, in which, among others, he drew the following conclusions:

Electricity possesses a certain value in the treatment of epilepsy.

It is not claimed that it can alone cure the disease, but in many instances it is of great service as an adjuvant to the bromides.

In the nocturnal variety its good effects are especially marked.

The methods of application to be used are central galvanization and general faradization.

It is important that the agent should be administered with great care. Anything like a shock should be avoided, and the applications should not be continued too long at a time.

The treatment should be kept up, with suitable intermissions, for two years after all epileptic symptoms have disappeared.

MEDICAL LAWS.

In another department of this number of The Journal may be found a copy of the new law adopted by the Legislature for regulating medical education and practice in the State of Minnesota. As a whole the law is much better adapted for the accomplishment of its legitimate purposes than most of the State laws hitherto enacted. Section 3 of the Act, by enumerating the *branches* required to constitute a minimum standard of medical education; by requiring the candidate to furnish proof of having attended three annual courses of Lectures of not less than six months each, and to undergo a full examination, both scientific and practical, by the State Board of Examiners, without any regard to college diplomas, is in strict conformity with correct principles of Legislation as briefly stated in The Journal for March 12, 1887. The *Section* would have been more complete and efficient if the term of study had been specifically stated as not less than three years, and if to the branches of study required, had been added, attendance on Hospital Clinical Instruction during the second and third courses of Lectures. Section 1, which requires the Governor of the State to appoint a State Board of Medical Examiners consisting of nine members, and defines their tenure of office, is very defective in some respects, and in direct violation of sound principles of Legislation in

others. For instance, the *Section* makes no allusion to any standard of qualifications, professional, moral, or social, necessary to render a person eligible for appointment by the Governor as a member of the Examining Board. So far as the language of the law is concerned, he may select at least *seven* out of its nine members from the ranks of mechanics, merchants, lawyers, or saloon-keepers, or he may select physicians who have not been out of college six months or practised in the State six days. And yet, as if to show the climax of inconsistency the law specifically declares that "no member of any college or university having a medical department shall be appointed to serve as member of said board," but at least *two* of the board *must be* "homœpathic physicians," whether two such can be found in the State or not. Doubtless the Legislature of Minnesota intended that the Board of Medical Examiners should be composed of members of the medical profession, and quite probable that the Governor will make his appointments in accordance with that intention. But it would have been very much safer, more in accordance with correct principles of Legislation, and more consistent with the equality of citizenship, if the law had clearly required the Governor to appoint a State Board of Medical Examiners consisting of nine members of the medical profession, of good general and medical education, of good reputation, and not less than five years resident practitioners in the State, and avoided all invidious distinctions not founded on personal qualifications.

THE TREATMENT OF WOUNDS OF THE LIVER.

Traumatic lesions of the liver have but a small place in surgical literature. When deep, especially, they are usually considered necessarily fatal on account of the resulting hæmorrhage, and on account of the peritonitis which will most probably result from the hæmorrhage. There is a reported case in which in a deep stab wound of the liver followed by hæmorrhage sufficient to distend the abdominal cavity, laparotomy was performed, the peritoneal cavity cleansed, and sutures placed in the liver wound. The patient rallied from a state of profound shock and collapse, and remained in an apparently good condition for about twelve hours, and then died suddenly. The peritoneal cavity was clean, the liver wound was closed, and there were no signs of peritonitis. According to Elder the mortality of wounds of the parenchyma of the liver is 78 per cent. for incomplete ruptured wounds, 39.7 per cent. for shot wounds, and 37.5 per cent. for cut and stab wounds; but Meyer regards this estimate as too low.

From a paper by Burckhardt, in the *Centralblatt für klinische Chirurgie*, No. 7, 1887, it seems that modern antiseptic principles applied to wounds of the liver will considerably diminish the high mortality. The case is of sufficient interest to give rather fully: In March, 1886, a workman was stabbed in the left epigastric region, a little below the border of the ribs, and after receiving temporary medical attention he was taken to the Stuttgart Hospital. On admission he had not lost consciousness, but there were all the symptoms of considerable internal hæmorrhage. In the left mamillary line, on a level with a free border of the ribs, was a wound about two and a half centimetres long, in which two sutures had been placed. The belly was distended; and there was dulness in the lower abdominal region, but above and to the fifth rib on each side percussion was tympanitic. The patient was chloroformed, the wound reopened and enlarged to 12 or 14 ctm., and search was made for the origin of the hæmorrhage. When the peritoneal wound was opened a large quantity of black blood escaped. Several loops of intestine were replaced and carefully sponged. The situation of the wound was such as to give the idea that hæmorrhage proceeded from a large mesenteric or gastric branch, and the liver was not thought of, as no portion of this viscus was perceived. The knife had entered transversely, however, and on drawing the liver towards the wound Burckhardt found a wound in the left lobe of the liver 3 ctm. long, from which a considerable quantity of blood was flowing. The probe showed that the parenchyma of the organ was penetrated, below and to the right, to the depth of 5 or 6 ctm. The state of the patient was now such that it was necessary to terminate the operation as soon as possible. He introduced and pressed into the wound of the liver six or eight pieces of iodoform gauze, letting the ends hang out. The abdominal cavity was then cleansed, the intestinal loops again cleansed and replaced, and the external wound sutured in its whole extent, leaving, however, a place above for the introduction of a drain and for the removal of the pieces of iodoform gauze. A complete antiseptic dressing was then applied. The patient rallied well, and gained, in spite of a pneumonic complication, probably the result of an embolic detachment from the liver. When the first dressing was taken off there was a small escape of blood, the remains of the peritoneal extravasation, which was soon followed by a small quantity of bile. On the sixth day the gauze was removed and replaced by a new drain. On the twelfth day bile ceased to escape, and after nine weeks there was only a small

fistulous tract, caused by a piece of gauze which had been forgotten; when this was removed recovery was soon complete.

Burckhardt calls attention to the value of tampons of iodoform gauze as an excellent means for arresting hæmorrhage, and, in such cases, of preventing the escape of bile into the peritoneal cavity. In spite of the friable nature of the liver sutures are perfectly practicable, as experiments on animals have shown; but they are seriously inconvenient. An incised wound of the hepatic parenchyma must involve some of the bile-ducts, and it is unlikely that these could be sutured with convenience or success; and to simply suture the liver tissue about them would result in escape of bile into the peritoneal cavity. But a piece of iodoform gauze placed in the wound will arrest both hæmorrhage and escape of bile.

American Medical Association.—We invite the attention of our readers to the official notice of the next meeting of the American Medical Association in another column of this number of The Journal. The general sessions will be held in Central Music Hall, most conveniently located and admirably adapted for the purpose. There are gratifying indications of renewed interest in the Association in the most widely separated parts of the country. Let full delegations come from the East, the South, the West and the North; Chicago has room for all, and will give to all a cordial welcome.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, January 26, 1887.

The President, Jos. Taber Johnson, M.D., in the Chair.

H. M. Cutts, M.D., Secretary.

The discussion on Dr. Jos. Taber Johnson's paper on

CÆSAREAN SECTION

(see pages 189 and 270), was continued.

Dr. J. F. Hartigan said that although he had listened attentively throughout this discussion, nothing had been said to change his first impressions as to the proper procedure to adopt when confronted with such a calamitous situation. The Cæsarean operation is so ancient that its origin can hardly be traced. 'Tis enough to say that it was performed on the undelivered dead woman centuries before it was resorted to on the living. So far as he could ascertain, the first published histories of this operation on the living female—400 years ago—are just as misguiding as recent statistics; for the reason that only those have been reported that showed the most success, and we are left in the dark as to the numerous failures. In other words, more than 75 per cent. of the cases published have perished; while if the same pains were taken to bring to notice *all* the unfortunate cases, the supporters of this most formidable operation might be reduced to a minimum. The discussion of this subject has been going on elsewhere lately, and much of it seems to have been inspired by certain religious sentiment. But this is not a body of religionists. We meet to discuss medical subjects on a purely scientific basis, and to stand by those who place their lives in our hands, and *trust* us with them. He asked if it was right that a valuable life should be placed in further jeopardy in order to attempt to save one that has at most but a precarious existence. We will suppose that the operation is performed, and the child survives; it has only even chances of living up to the fifth year, and would such survival fill up the void left by the death of its mother? No, sir; our first and sacred duty is to the patient. In that terrible hour of trial we all have heard the cry, "Whatever you do, Doctor, save my wife!" Is there a man in this room who would turn a deaf ear to such an appeal, or who would any longer hesitate as to where his duty laid? He said he was no craniotomist, but the teachings of ages, as well as the dictates of conscience and humanity, compel us to treat our patients as we would treat ourselves, and to save that life which is of the most value.

My position on this question is best expressed in the following extract from Cazeaux and Tarnier, just published: "This operation may be practiced on the living female whenever the natural passages through which the child has to pass are so narrow, or so obstructed, that a delivery by the application of the forceps, or by symphysiotomy, is wholly impossible; and when the mutilation of the child itself would not permit its extraction without exposing the mother to the greatest dangers. It may likewise be resorted to for the purpose of saving the infant when the patient dies in the advanced stages of gestation."

Dr. G. Wythe Cook said that although we consider lives of equal value, still if confronted with the problem of an unborn child, the sacrifice of whose life was necessary in order to save that of the mother, there could be no doubt in his mind as to the choice. If more lives can be saved by the Cæsarean section than by embryotomy, then Cæsarean section is the operation to be done, for it is a serious thing to take the life of an unborn child, or even to teach that it may be done. Successes in Germany indicate that much may be hoped for in the direction of Cæsarean section, though the statistics of England and this country are not so encouraging.

He said that he spoke feelingly upon the subject, as some twelve or more years ago he was so unfortunate as to be called to a case in the country in the care of a midwife, in which the arm had been pro-

truding for twelve hours; the shoulder was impacted, but the child was still alive. Being unable to turn and deliver it, a consultation was called, the physician attempted to turn, but was unsuccessful, as Dr. C. had been, though the patient was completely under the influence of chloroform. The consultant agreed that the child could not be born alive, but would not consent to Dr. Cook's proposition that embryotomy should be immediately done, as the child was still alive, and advised delay. Dr. Cook said that under the circumstances he could but wait. The child finally died, and was removed by embryotomy. The mother had septic fever, and died also. Here was a case in which both mother and child might have been saved by Cæsarean section. It is certain that nothing was gained by not performing embryotomy. When it is taught that Cæsarean section is the operation to be done in most of these cases, when the child is alive and can not be delivered *per vias naturales*, there is no doubt in his mind but that the country practitioner will have the nerve and the skill to perform the operation, and his successes will compare favorably with those of his metropolitan brother.

Dr. S. C. Busey said that he must defend himself from having made any distinction between the relative ability of the country and city practitioner. In his remarks he spoke of the "ignorant" as a class, and made no distinction as to where they lived.

Dr. T. E. McArdle thought that the Cæsarean section is being taught as *the* operation. At a meeting of the New York Academy of Medicine, June 8, 1886, Dr. Charles Carroll, Secretary, read a paper on the "Future Influence of Surgery and Surgical Resources upon Obstetrics." In the discussion, as reported by the *Medical News*, June 12, 1886, Dr. Polk is quoted as saying: "Before the obstetricians of to-day lies the grandest problem that can possibly engage their attention, viz., that in connection with the Cæsarean section I do not doubt that within the next two years it will be possible to eliminate entirely from practice the most repulsive of all procedures, the destruction of the life of the fœtus by craniotomy. When this has been accomplished there will have been achieved the greatest work ever done in surgery, and the honor of it will belong to the obstetrician."

Dr. Hartigan said that out of 164 cases, according to Heyner, 102 mothers were lost, or sixty-two per cent. But there were only 101 children survived, the rest being still-born, and as only one-half are expected to attain the fifth year, this leaves only fifty children saved of the 164—showing and infantile mortality of seventy per cent. So that, out of the whole number—328—only sixty-two mothers and fifty children survived—112 in all. Now had craniotomy been performed, it is not unreasonable to suppose that at least 150 mothers would have been saved. Therefore, without regard to the relative value of the lives, who can sustain the Cæsarean section in the face of such figures?

Dr. J. R. Brownell said that, believing that the operation of craniotomy, on the living fœtus, is a perfectly justifiable operation under certain conditions, and that, in the present state of medical, surgical, or obstetrical science and human deformity, it cannot be abolished without the sacrifice of life, which cannot be saved in any other way, he could not permit to go unchallenged some of the statements made. Dr. McArdle calls it "a deliberate and cold-blooded murder," and classes it with criminal abortion. That those of us who have been forced to the operation of craniotomy on the living child should not be accredited with a conscience, rather surprises me. Quoting from the debate of the last meeting we have the following: "The life of the child must always be considered, even at the expense of increased risk to the mother." "Who will compare the unlimited possibilities of the unborn child with the life of a woman who cannot bring a viable child into the world?" I contend that, if the two operations afford only equal chances of saving the life of the mother, it is our duty to give the child a chance for its life, and perform Cæsarean section. If, however, there is greater risk to the mother in submitting to Cæsarean section, or, as is often the case, all odds are against her, we must endeavor to save her by sacrificing the child, who has no certainty of life by the Cæsarean section. Shall we only consider the life of a woman of value because she can bring a live and viable child into the world? Is she only to be considered as a child-bearing machine? If so, a man is justifiable in putting away the wife who cannot bear him children, and seeking until he finds one who can. He who acts under such "conscientious discharge of duty" presumes beyond his prerogative in constituting himself jury, judge and executioner. I would ask if it may not be as much the fault of the child's head in being too large, as of the pelvic diameters in being too small, the woman having already been a mother, with little less than a normal pelvis? Have not instances occurred where the descending head was so large as to be out of all proportion to a perfectly normal pelvis? Increase our knowledge of pelvimetry until we can ascertain, with mathematical exactness, the diameters of the pelvis, and yet we have no positive means of measuring the size of the child's head in the mother's womb until it is too late to do anything but sacrifice it, that we be not responsible for two lives instead of one. Will the most thorough knowledge of pelvimetry prevent the necessity of craniotomy, or embryotomy, in the case of locked heads in twin births? the retained after-coming head in breech presentations? or in transverse presentations, when the membranes have ruptured? the distorted body forced low down into the pelvis, so low down as to preclude all possibility of moving it? All this occurring before we saw the patient, possibly due to her living at some distance from us, and consequently unavoidable. Are not these instances, if there were no others, in which the operation of craniotomy on the living child would be justifiable? When version and forceps have failed, or are rendered impossible from the peculiar nature of the case, the woman's life slowly, but surely ebbing away, from protracted pain and suffering, her life further jeopardized by damage threatened to the lower uterine segment and soft parts through protracted continued pressure, the child under any other circumstances immovable, the disproportion between

the head and the pelvic diameters so great as to preclude all possibility of its passing, and when Cæsarean section, under such circumstances, shows a maternal mortality of from 80 to 90 per cent., if we hesitate we will be responsible for two lives instead of one.

DR. BUSEY disclaimed any intention on his part of discussing the subject upon personal or religious grounds, and he had so stated at the beginning of his remarks.

DR. J. TABER JOHNSON, in closing the discussion, said that while one was at a disadvantage in closing a discussion which had lasted over three evenings, there were several points to which he wished to call attention. In the first place, he desired to thank Dr. King for his kind and complete endorsement of his paper. Dr. Thompson had said that I recommended craniotomy in the United States and Cæsarean section in Germany, where there were better operators. Then he says that craniotomy must sometimes be done even to save the mother. In this last remark we agree, so that it needs no discussion.

My paper was confined entirely to Cæsarean section in the United States, of which I had full data; and, knowing the feeling upon the subject, I entitled it "Can the Cæsarean Section Supplant Craniotomy in the United States at the Present Day?" To this the answer was, No. Now, while I endorse all that has been said in favor of Cæsarean section, my conscience would not permit me to agree that craniotomy should be entirely abolished. In my opinion, there is no comparison between the value of the life of the fœtus and its mother, and our duty is to her first. Save them both if we can. Dr. Thompson says that the Cæsarean section is a "cleaner and more perfect surgical procedure"—these words occurred in my paper, so there again there is agreement. The statistics quoted in my paper were not made by me, but by the surgeons of the United States who performed the operations. These showed that of nineteen Cæsarean sections done in the United States during the past ten years, seventeen of the women had perished and fourteen of the children were still-born, and that of the five Sänger operations performed within the last five years all of the mothers died. That is not a brilliant showing for our operators, especially when compared with the results obtained in Germany.

Dr. Busey blames me, and also Dr. King, for stopping the wheels of progress by teaching that a child could be "killed at will." Until there is a better average than 90 per cent. mortality for Cæsarean section in our country, no one ought to be blamed for holding on to craniotomy a little longer. To use Dr. Busey's own way of arguing, let us compare the last nineteen Cæsarean sections in the United States with nineteen imaginary craniotomies. In the former, with the possibility of saving thirty-eight lives, only seven were preserved; while in the latter, although we start with only a possible nineteen, the number of saved would not probably be as low as seven. Harris says of this mortality in the United States that "it makes him sick at heart to think of it;" and Parrish says "it is a terrible mortality, and should make American operators hang their heads in shame." I do not think that Dr. Thompson himself would do or favor the repetition of an operation in general surgery that had 90 per cent. mortality, or, as Dr. Busey would put it, out of thirty-eight lives involved, one that would only fail to "immediately kill" seven.

Dr. Meadows has been quoted as being in favor of totally abolishing craniotomy. On p. 270 of his book, however, he states that he has performed "sixteen craniotomies with only two deaths." He probably could not have saved as many mothers by the Cæsarean section. In speaking of the Cæsarean section, on p. 292, he refers to a patient as "leaving her to the terrible prospect of Cæsarean section;" and on p. 293 says: "I fully share Dr. Barnes's dread of the Cæsarean section." This does not look as if Dr. Meadows was a very ardent supporter of Cæsarean section, whatever his opinions of craniotomy. For his part he would agree with Bedford when he says: "The man who would *wantonly* thrust an instrument of death into the brain of a living fœtus would not scruple, under the mantle of night, to use the stiletto of the assassin." Those who would *wantonly* kill a child; those who speculate in human life; those who "kill at will," are the ones he would condemn. The term "murderer" is a rather harsh one to apply to men who are acting as conscientiously as those who do the Cæsarean section. Who does the "killing" when Cæsarean section is done when delivery is impossible except by craniotomy, and both mother and child die? Might not the broad-minded physician have saved the mother? The question is submitted to the husband, and we hear the cry, as Dr. Hartigan says, "For God's sake save my wife!" There is no love for the unborn child under the circumstances, while the husband does love his wife and would oppose the risking of her life. Who of the audience would submit his wife to the "increased risk" favored by one speaker? Where do we go for our authority in these matters? and if we had a suit at law, to whom or what should we refer? To the text-books—and there is not a text-book published to-day that does not tell how and when to perform craniotomy. If we were to pass a resolution to-night, declaring that the doctors of the District should never do craniotomy, and should adhere to it, the people would not have us in their houses, because they would consider us men who did not know our duty to humanity; or if we did, would not perform it.

Prof. C. Braun, who has successfully performed several Cæsarean sections, and the Porro operation three times, states, on p. 691 (Lehrbuch der Gynäkologie) when the operation should not be, as well as when it may be done. He says: "This operation is not permissible when the parturient woman, in full consciousness and without indirect coercion, declines the Cæsarean section. Further on he says: "It is not right to subject her to this operation without her consent, when she has been rendered unconscious by disease, anæsthetics, poisons or intoxicating drinks." In this Braun differs somewhat with Drs. Busey and McArdle, and agrees with me that craniotomy should sometimes be done. Dr. Busey says that craniotomy is inadmissible in the justo-minor pelvis, and quotes Lusk and Taylor to prove this assertion. As a mat-

ter of fact, they only condemn it in what we call the higher grades of the deformity. As against this assertion Merkel reports, out of 100 craniotomies, thirty-seven in the generally contracted pelvis with only two deaths. Also we find that C. Braun, Spaeth, Schroeder, Créde, Spiegelberg, Charpentier and Barnes explicitly advise the performance of craniotomy in the lower grades of the generally contracted pelvis. I would add to these Cazeaux and Playfair, and refer to the views of Parvin as quoted in my paper. Dr. Busey quoted four men as taking ground against craniotomy. Of these Lusk (p. 482), says that, under certain conditions, "delivery of the child without perforation is often impossible," and I personally know that Mr. Tait does not believe in the total abolition of craniotomy. Dr. Busey has discussed the question from the proper standpoint of its scientific aspects, and left out personalities, which is difficult to do in such discussions. For my part, I desire to discuss it in the same spirit. Drs. Bromwell, Hartigan and Cook have also viewed it from the same aspect. The latest speaker says, however, that "no man is able to say which life is of most value." Perhaps if the mother were a relative of ours there would be no difficulty in making up our minds. But Dr. McArdle, at the last meeting, was not quite so impersonal. In his written remarks, he quoted largely from my paper. Dr. McArdle was the first in this city to suggest the total abolition of craniotomy, and therefore deserves the title of reformer. I cannot endorse his position, and have not the time and patience to discuss the peculiar points made by him.

The public and the profession are not yet ready for the abolition of craniotomy, and even most of those who talk against it admit that there are cases in which it gives the best, and perhaps the only chance to the mother. When there is a doubt in a case as to which operation is the most expedient, one always wants advice and counsel. What is the use of sending for a man who will not judge by the symptoms in the case, but who is bound by a cast iron rule never under any circumstances to perform craniotomy, whose opinion you know is adverse? You are aware that it cannot be changed by evidence or reason, and are thus debarred from sending for him. In the case reported by Dr. Cook a living child was *allowed* to die by delay and then delivered by embryotomy. Its mother died also as a result of this policy. If embryotomy had been done sooner, in accordance with Dr. Cook's wishes, and with proper arrangements, the woman would probably have been saved. Dr. McArdle makes it appear that Polk teaches that craniotomy should be abolished. Polk only says that he *hopes* it will be abolished in two years; and I unite with him and all those who would utterly abolish craniotomy in hopes that medical science may, sooner than that even, arrive at such a state of perfection as to render "sacrificial midwifery" unnecessary; but at present, as argued in my paper, I cannot favor its *complete* abolition. I would join hands with the half-dozen who agree with Drs. Busey and McArdle, and work with them to that end—but I believe now with Barnes, "that as yet the total abolition of craniotomy is an aspiration, not an accomplished fact."

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, February 9, 1887.

(Concluded from page 278.)

THE PRESIDENT, J. SOLIS COHEN, M.D., IN THE CHAIR.

DR. H. A. KELLY presented the

RESULTS OF SOME GENERAL WORK IN ABDOMINAL SURGERY WITH CASES AND SPECIMENS.

Many here to-night remember the time when the large cystic ovarian tumor was considered the only indication for abdominal section, and, if other conditions were accidently discovered, the incision was simply quietly closed. The dangers of the operation itself were so great that surgeons were loath to interfere until the wretched condition seemed to warrant the risk. As, however, our race cultivated a familarity with the peritoneal sac, and learned its limits of toleration and intolerance, a bolder and more successful work was entered upon. With dropped pedicles, innumerable ligatures for hæmorrhage, peritoneal toilet, drainage tube, and above all, an unremitting care to secure *microscopic* cleanliness throughout, we have become masters of the situation, and our failures, when they occur, are no longer *mysteries*. And with these improvements has come a recognition of greater variety of indications for abdominal section, until, as to-night, I am able to present, out of twenty eight successive cases, at least nineteen separate morbid conditions.

In the removal of small tumors in the pelvis, in the removal of ovaries and tubes not to the naked eye diseased, we are most often compelled to operate for *pain*. The patients themselves, *seeing* nothing amiss, are very loath to submit to "being opened" until their misery makes life a burden—at least this has been my own experience with women, to whom I always explain, in the fullest possible manner, the exact nature of what I propose to do, and its consequences. It is gratifying to the operator, who has finally been driven to this expedient, to find gross lesions suitable for class demonstrations, but the most typical relief often comes where the disease cannot be so easily demonstrated; and in cases where there are palpable tumors, the surrounding infiltration and cellulitic inflammation are often serious enough to delay convalescence, for a long time defeating the operator. Thus, if I were asked, in my own work, which of my cases had given the most gratification—that is, where had the relief been most typical and striking from a condition of suffering—I would point out a patient who was for more than two years unable to take a step on account of the great pain in the right ovarian region; in addition, she was a most wretched sufferer throughout the whole time. There were no gross lesions in the ovaries, and it was long a question with me whether she had not some other serious organic disease, which question I debated under the most varied and patient efforts at general and local treatment, until, with the removal of ovaries here shown, she rose up as if a great weight had been lifted off her, and went

home to her parents and friends, a walking miracle.

Another case, well illustrating this point, is that of Mrs. W. She suffered ever since her first menstruation, from pains which left her a most degraded picture of misery when she came to my office. I found the remains of chronic ovaritis and the wiry tubes of a chronic salpingitis and perisalpingitis, which had contracted down so tight and adhered to so many surrounding structures that they were exposed and removed with the utmost difficulty. This patient has gained eighty pounds since the operation. These results, and some others I might detail had I time, are undeniably brilliant; but cures are not always so typical, and I am still often satisfied in this, my work, if I can but remove one element (perhaps the most distressing) of my patient's sufferings. If my patient can only come back to me and say, "you have taken away that dreadful pain in my back and stomach; life is now bearable, before it was unbearable," I am well content. One of my patients exhibits this well. She had a rapidly growing tumor in the right ovarian region, which seemed in a most unaccountable manner, to prostrate her general health. I decided this to be a case of extrauterine pregnancy, and I believe my section proved it. She is now like another woman, although still under treatment for an induration of the left apex, undiscoverable before operation.

I do not claim wonders for this field of work. I claim for it what is asked for other fields of our art—that the *results* justify the means. It is of *results* I wish now to speak, with a brief preliminary as to *difficulties*. The difficulties encountered in handling small pelvic tumors are often very great, far exceeding that of removing an ordinary cystoma.

First, the abdominal walls, which have never been distended, press tightly down upon the contents, and the recti pinch the fingers like a vice, utterly defeating any effort to catch or raise pelvic viscera, and this in spite of ether and chloroform. I have been obliged twice to overstretch the recti before I could proceed.

Secondly, in case of chronic peritoneal inflammation, the bleeding from the more superficial vessels of the abdominal wall may be extreme.

Thirdly, the intestines, in this close sac, often cling to the fingers until they feel as if they were clothed with several pairs of gloves, and just as useless.

Fourthly, when the patient is very obese, the embarrassment of the operator is greatly increased, requiring a much larger incision, prolonged manipulation, with difficulties of closure and subsequent dangers.

Fifthly. Cellulitis, so common a concomitant, so draws down and anchors everything in the pelvis, that the structures are elevated with extreme difficulty, and only a pedicle in the *technical* sense, can be secured. The dangers of secondary hæmorrhage from this kind of a tie is, I know, very vividly before the minds of all operators of experience. It is, at times, about like tying the apex of a broad-based pyramid. I tied off some broad ligament structures on a fibro-cystic tumor the other day, which impressed me for all the world like putting a ligature on a paper wall.

Lastly. These smaller diseased structures often become parasitic on neighboring tissues and organs for their blood supply, and when they are torn loose, the bleeding is alarming; and it may be deep down in the pelvis, possibly requiring an enlargement of the original incision, and then only seen with the utmost difficulty of exposure and illumination.

[DR. KELLY then read a table of his operations in 1886.]

In one of the patients operated on in 1886, I did what has, I believe, never been done before: opened the abdomen upon a diagnosis of hypertrophic cirrhosis of the liver, with the intention of puncturing—hepatophlebotomy. The patient, about 40 years of age, had a very large ascites, which had been treated for some weeks, but never tapped; and with full confidence in the safety of a simple incision, I made a free opening, large enough to admit two fingers, just below the umbilicus, thoroughly emptied the peritoneal cavity of two bucketfuls of fluid, and on reaching the liver found the organ contracted and hob-nailed; I consequently closed the incision, which healed perfectly. The fluid reaccumulated very slowly until the man died, some weeks after, in the natural course of the disease. My friends, Dr. R. P. Harris, and Drs. Freeman and Bradford, residents of the Episcopal Hospital, were present. I had long intended to use this direct method of abstracting blood from the liver, in view of my experiences in hospital and private practice since, before Dr. George Harley recommended plunging a trocar into the liver through skin, subcutaneous tissues, and two coats of peritoneum, in the right hypochondrium, with the same end in view—hepato phlebotomy. If, however, I am going to draw blood from this organ in a state of inflammation, I prefer an incision free enough to allow me to handle the organ, and, under full control of the eye and touch, to direct the trocar to the proper place, free from the danger of wounding other structures or large vessels. The incision should be made just above the umbilicus.

As to another case, that of my office nurse, I will content myself by briefly remarking, that she suffered constantly for four years with a dragging pain in the left side, and two years ago last December, she was tapped for what was believed to be a large ovarian tumor. The fluid was straw colored and coagulated spontaneously in the bucket. She came to me from Ogdensburg, N. Y., twenty months ago. There had been no reaccumulation of the fluid, but she suffered constantly with dragging pains in the left side. I found here masses attached to the left cornu uteri, which I mapped out in my book; but, to my astonishment, I found in the course of a few weeks, while under treatment, that the tumor diminished and seemed to have shifted its site. Bimanual examination, while still revealing well-defined masses in the neighborhood of the uterus, yet yielded such a different find that I was disposed to distrust my records. As her suffering increased, I made an incision last spring, and found the intestines universally adherent, like one great sac, but free from the abdominal wall; the pelvic structures were so bound up that I could define nothing. Some serous fluid oozed up into the

incision and coagulated *in situ*. This was carefully cleaned out of the whole peritoneum, a piece of membrane, containing isolated tubercular granulations, snipped off for microscopic examination, and the incision closed. She apparently made a perfect recovery, and returned to New York, doing a great deal of hard work all summer, (had not been so well for twelve years). She returned to me upon my return from Europe, and, until seven weeks ago, remained in perfect health The old pain then began to distress her again, and with it was a continuous elevation of temperature. After waiting until it was impossible for her to drag herself around any more, I again made an abdominal section, by a smaller incision to the right of the old incision, for the purpose of cleaning out the cavity and dusting well with iodoform. She insisted upon preparing everything for the operation herself, and lay down upon the table and submitted to the section *without* a general *anæsthetic*. I made multiple hypodermatic injections of a few drops of a 4 per cent. solution of cocaine in the line of the incision. The pain of the incision was but slight. It increased with the introduction of two fingers within the peritoneum, but was easily bearable. In fact, once she warned Dr. R. P. Harris, who was present not to make her laugh. The only severe pain felt was in handling the matted structures in the left side of the pelvis. Sixty-two grains of pure powdered iodoform were sprinkled over the peritoneal surfaces, the incision closed, and the patient put to bed without the slightest shock or discomfort. She insisted on unbuttoning the jackets worn by the operator and assistant, and was as comfortable from that moment until she rose on the sixth day, to take a drive on the seventh day, as if there had been no operation. All trace of the induration has disappeared and she has since felt perfectly well, although the ultimate result remains very doubtful.

Dr. Jos. S. Neff read the report of a case of

PERFORATING ULCER OF THE STOMACH, WITH CHRONIC PERITONITIS.

Alfred Reed, colored, stevedore by occupation, 45 years old, was admitted to the Medical Ward of the Philadelphia Hospital, December 12, 1886. The family history was indefinite; he had had the ordinary diseases of childhood; pleurisy when about 19; enteric fever a few days later; says he had relapsing fever about twenty years ago, since which time he has often had pains and stiffness in the joints, but not severe enough to prevent him working. During the last year he has had occasional attacks of indigestion, rarely accompanied by nausea and vomiting. Last spring he vomited blood; had sensations of burning heat in the stomach, and other evidences of indigestion, with extreme acidity of the stomach; there was very little pain until the latter part of July or the first of August, at which time it was confined to the abdomen (?), and was constant, but more marked after eating. From this time he vomited after almost every meal, and it was not long before he could retain only liquid food. At first the vomited matter was simply the undigested food, later small quantities of a slimy, watery fluid as well. From that time up to admission he vomited blood, dark in color, small in quantity, but once or twice.

Does not remember any sudden onset of pain, chill, or any symptom pointing to perforation of the stomach, or acute peritonitis. His weight last winter was 190 pounds, but at date of admission he was much emaciated, complaining of severe and constant pain over the upper portion of the abdomen, especially in left hypochondriac region, not being able to bear the slightest pressure. There was a small prominence, slightly firmer than the rest of the abdominal wall, situated below the margin of the ribs, one inch to the left of the median line, ovoid in shape, the horizontal diameter being three inches, the vertical diameter two inches in length. Over this area the percussion note was somewhat dulled—*i. e.*, on light superficial percussion; the motion of the diaphragm was not imparted to the mass. He referred to this point as the source of pain which radiated over the entire abdomen and through to the back.

Physical examination showed the heart to be of normal size, first sound absent, second accentuated, more marked over aortic valve; no murmurs were heard; the temporal and radial arteries were firm and hard, not compressible, with no perceptible pulse in the wrists. A systolic bruit was heard posteriorly over the thoracic aorta.

The lungs were normal, but many mucous râles were audible in the bronchial tubes.

No increase in the liver or splenic dulness could be made out, as he could not bear any pressure below the diaphragm.

His general condition improved somewhat for a short time after admission; the pain, however, remained constant, and vomiting was of frequent occurence.

He died of exhaustion on January 1, 1887. During the time he was under observation no change of note occurred. The temperature ranged from normal to 95.5°. He vomited blood once only, on December 15, small in quantity, and dark in color. Paroxysmal spasm of the diaphragm commenced December 16, and lasted with intermissions until death. A loud systolic murmur was detected on the 19th, with area of intensity over the apex. The urine remained normal throughout, and much reduced in quantity; specific gravity 1.032; reaction markedly acid, and of high color. No albumen or sugar.

The diagnosis was made of cancer of the pyloric end of the stomach with secondary peritonitis, induration with inflammatory infiltration, and adhesions between the diaphragm and the stomach.

Autopsy.—External Appearances.—Body much emaciated. Abdomen scaphoid.

Thorax.—Lungs were normal, except hyperæmia, and were firmly adherent to the diaphragm. No other pleural adhesions.

Heart.—Pericordial sac obliterated by adhesions. Left ventricle large, firmly contracted. Right ventricle small, and partly filled with a firm clot. Valves normal. Aorta shows marked chronic endarteritis

throughout its whole thoracic portion, and extending to abdominal aorta. Left ventricle was small, wall thickened, red, and firm.

Abdomen.—Peritoneal cavity contained a quantity of purulent (?) matter. Peritoneum inflamed, the coils of intestine extensively adherent to each other, and to the liver, spleen, stomach, and diaphragm. There was a sac formed at the hilus of the liver by adhesion of the duodenum with the gall-bladder and under-surface of the liver. This cavity contained purulent (?) fluid with thickened walls. The gall-bladder was flattened from pressure, and contained a small amount of thickened bile. The meso-colon showed inflammatory thickening. The upper surface of the liver was extensively adherent over the right lobe to the diaphragm. The left lobe was intimately connected with the stomach. There was a cavity formed by the anterior surface of the left lobe of the liver, the anterior surface of the pyloric end of the stomach with the diaphragm forming its roof. The right wall of the cavity was formed by the suspensory ligament of the liver, the anterior wall by adhesion of the liver and stomach, the left wall by adhesions between the diaphragm and the anterior wall of the stomach. The cavity was filled with a grumous material, its walls being indurated and inflamed. In the floor of the sac there was an opening a half inch in diameter through the anterior wall of the lesser curvature, about half way between the cardiac orifice and the pylorus, and a half-inch to the left of the left edge of the left lobe of the liver. There was also another sac formed by adhesions between the diaphragm, spleen, and cardiac end of the stomach. This appeared to be a blind cavity having no communication with the one just described, or the stomach; it contained a similar looking thick grumous fluid.

Stomach.—Walls were greatly thickened, more marked at the lesser curvature. In the neighborhood of the perforation noted the wall was thinner, the orifice presenting a rounded edge. When opened the mucous surface throughout appeared greatly rigid and mammillated, general thickening being most marked at the pylorus. There was no indication of neoplasm.

Spleen.—Adherent throughout its whole surface, very small, firm, with dark-red fibrous pulp.

Liver.—Right lobe large, the left being small. Flabby cut surface shows a slightly congested parenchyma.

Pancreas.—Normal.

Kidneys were firm, cyanosed, normal in size; capsule slightly adherent; some small cortical cysts; thinning of cortex, and interstitial thickening.

The point of interest clinically is in connection with the diagnosis from malignant disease. The constant character of the pain, the persistency of the vomiting without remissions, the small amount and character of the hæmorrhage, the gradual loss of flesh, with apparent cachexia, and the presence of a painful, non-fluctuating tumor, would warrant a diagnosis of cancer. I should mention, too, the presence of constipation as being of some value.

The circumscribed cavities noted were the result evidently of inflammation from the passage of the contents of the stomach into the peritoneal cavity, the secondary adhesions binding the organs together in such a form as completely to shut off the small cavity in the left side from any outlet, while the larger in the right side still had direct connection with the anterior of the stomach. The cause of the immobility of the tumor upon deep inspiration was undoubtedly due to the fact of the diaphragm itself being thoroughly adherent to the chest-wall over a considerable extent of its surface, and therefore having very little play during the respiratory movements.

Dr. Henry F. Formad said: The case of Dr. Neff's is of great interest, from the fact that the patient's life was considerably prolonged by the formation of a sac which retarded the development of peritonitis after the rupture of the ulcer. The case is also interesting, from the fact that it occurred in a male. In some twenty-two cases of gastric ulcer in which I have made the post-mortem, in about seventeen the subjects were females. This agrees with the experience of others. Gastric ulcer is not a rare condition, but many cases are overlooked because physicians are in the habit of opening the stomach through the smaller curvature, and it is here that the ulcer is most frequently situated. In the majority of cases that I have seen, the death was sudden, being due to perforation. In some the death was apparently due to shock, the whole of the contents of the stomach having in many instances escaped into the peritoneal cavity. Death occurred before there was time for the establishment of inflammation. In some cases there was free hæmorrhage, and in one case there was a complete blood cast of the stomach.

Some of the cases that I have seen have been in drunkards, some have been in hysterical women, and some in the insane. Three of my cases came from the Insane Department of the Philadelphia Hospital. Dr. Dercum informs me that he has met with several cases of gastric ulcer among the inmates of the Norristown Insane Asylum.

Dr. Addinell Hewson said: I wish to express my opinion in reference to certain points in connection with the paper read. The speaker stated that he has resorted to the operation for the relief of pain in cases where the diagnosis was not definite and the existence of a tumor not positively made out. In an experience of over three hundred cases, I have not seen one in which relief of pain was not directly afforded by the application of clay. In reference to the stretching of the cicatrix, it has been my lot to see a good many cases of hernia following laparotomy. In one three or four large herniæ protruded. In this case I resorted to the use of a 50 per cent. solution of silicate of soda applied on strips of gauze, such as the late Dr. Paul Beck Goddard used in his collodion dressings.

Dr. J. M. Baldy said: I would first refer to the case in which the uterine appendages were removed for metritis. This is a new indication for the operation, and it seems to me that it would be a unique case in which such a procedure would be justifiable. There are many men of large experience who have

not seen an uterus which they were unable to reduce to a normal size without recourse to surgical procedure. In regard to cystomata, it is important that as soon as they are diagnosed they should be removed. It has been claimed that rupture of the cyst is followed in a shorter or longer time by malignant disease not only of the appendages and peritoneum, but also of other organs. It is important in pyosalpinx that the appendages be removed on both sides.

I have seen a good many cases of pyosalpinx operated upon, and in some cases where the disease was unilateral the unaffected tube has been left. In a recent case operated on by Dr. J. Price this was done, and two months later the second tube became involved; on opening the abdomen it was found impossible to remove it on account of the adhesions present.

As a rule, we can discover no disease. There are cases, however, which will tempt most of us to operate. Dr. Kelly's case of simple chronic salpingitis in which he had such happy results is a case in point. A case operated on by myself was just such a one and terminated just as happily.

Dr. J. Price said: In Dr. Kelley's cases it is as yet too early to speak positively with reference to hernia, but his incisions have been short. In the December number of the *Lancet*, Mr. Tait gives a review of this whole subject and of hæmatocele. I wish to argue against the removal of the appendages for defective involution. We have many other methods of treatment which will surely accomplish the same result without resorting to such bold measures. I consider this an unjustifiable procedure.

At present, the surgeon simply presents numbers and percentages of recoveries as representing the exact measure of his skill in operating and care in the after-treatment. Too great importance has been given to bare statistics. The conditions inherent in the patient which determine the result beyond the control of the surgeon are barely considered, nor faults of omission or commission on his part. Perfect evacuation of pus, the utmost cleanliness, and perfect drainage—I mean a high degree of surgical cleanliness.

The growing tendency to hold the surgeon strictly responsible for every unfavorable result has stimulated abdominal operators to great care, and the most careful study of every detail. Hence, the methods of abdominal surgery have become well-nigh perfect.

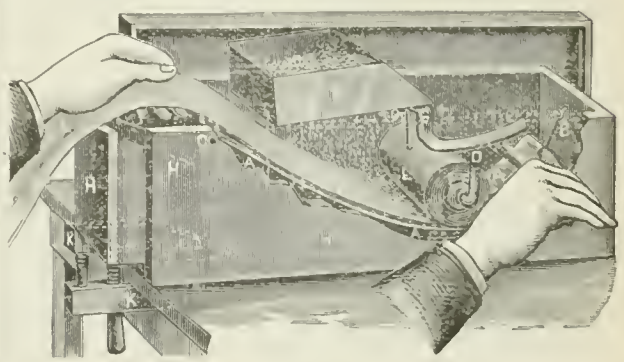
Dr. Kelly said: I have had no practical experience in the treatment advocated by Dr. Hewson; if it can be shown to be practicable in such cases as I have detailed this evening, I will try it. My efforts, however, have been directed toward the establishment of a cure, and not palliation. With reference to the case of enlarged painful uterus, with endometritis, of which Dr. Price has spoken, I desire to make the following statement, and at once prevent any further misconception upon so serious a subject. I hesitated in reporting this case lest I should be misunderstood. I do not wish to recommend a sectional operation for subinvolution or metritis in general. I am weekly treating many such cases without any idea of operative interference. In this particular instance the patient had not only been long under treatment in one of our first hospitals, but I had faithfully tried every means at my disposal for two years—counter-irritation, douches, packing large wedge-shaped excision of the cervical lips, and an Emmet operation on the perineum, hoping by this support, free depletion, and rest in bed to secure a permanent advantage. She was only slightly benefited, remaining a miserable sufferer until I operated, removing tubes and ovaries. The uterus decreased *at once* in size, and is now three inches, with a small hard cervix, and reclines in the sacrum rocking-chair fashion. She has no local tenderness whatever. I attained here a perfect result which I was unable to reach in any other way, and under similar circumstances I should repeat the procedure. If permanent, this will be one of the most gratifying of my cures.

Dr. H. Augustus Wilson presented and described:

A NEW APPARATUS FOR PREPARING DRY GYPSUM BANDAGES.

Rolling the dry plaster-of-Paris bandages by hand, the method usually in use, is unsatisfactory, and under the most favorable circumstances a dirty process. It was to avoid the inconveniences and irregularities of that method that I devised this apparatus, which I have had made by A. G. Gefvert, orthopædic apparatus manufacturer.

It consists of an ordinary box-bandage roller, with addition of the following: A movable bottom, A, A, A, held in contact with the outermost layer of the bandage as it is rolled, by a rubber band B, and the other end by a hinge-joint C. Upon this movable bottom, and just in front of the crank, is a flood-gate or distributor, not shown in the illustration, which equalizes the distribution of the plaster and presses it into the bandage from above, while the movable bottom prevents the gypsum from passing through the meshes. The proper tension is applied by two rubber bands.



A hopper, E, is provided with an arm, F, bent in such a manner as to be raised by the crank at each half turn, and upon being released, it falls, throwing down a quantity of the powder upon the bandage in front of the distributor. A compartment, H, H, H, occupying the otherwise waste space under the mova-

ble bottom, is utilized as a receptacle in which may be kept the gypsum when the apparatus is not in use.

A scoop accompanies the apparatus in which to take gypsum from the compartment and fill the hopper. The entire affair can be securely held to a table by a clamp, K. Elastic bands are used for springs, because they are inexpensive and can be very readily replaced when worn out.

The method of using is, first to pass the end of the bandage to be rolled over the movable bottom, under the distributor, and attach to the crank. The hopper is now to be placed in position and, by means of the scoop, filled with a sufficient quantity of gypsum. While the crank is turned with the right hand the left guides the bandage, which may be watched, over the hopper, as it is being rolled.

The bent arm of the hopper is so arranged that the fall of the hopper may be sudden or gradual, and upon this depends the quantity of powder discharged. When the crank is turned very slowly the hopper is raised slowly and descends with the motion of the crank, and scarcely any gypsum is precipitated, and, of course, the converse follows. This being clearly understood, a very slight experience will enable any one to control the action of the hopper with the crank.

When a bandage is finished, the crank is withdrawn sufficiently to disengage it from the bent arm of the hopper, and while the left hand holds the bandage a quick reverse turn of the crank enables it to be easily withdrawn. The gypsum remaining on the movable bottom is now discharged into the compartment by placing the hopper to one side, detaching the spring, B, and raising that end.

The apparatus is applicable to the rolling of the ordinary surgical bandage by detaching the rubber spring, B, thus allowing the movable bottom to drop out of the way. It prepares the dry gypsum bandages evenly and quickly. It is very simple in its construction and action. It cannot get out of order, except by the breaking of the rubber bands. It is inexpensive. Possessing these advantages, I hope it will be of service and facilitate the preparation of the dry gypsum bandages in the hands of other physicians as it undoubtedly has in mine.

STATE MEDICINE.

REGULATION OF THE PRACTICE OF MEDICINE IN THE STATE OF MINNESOTA.

[The following is a copy of the law for regulating medical practice, etc., adopted by both branches of the Legislature of the State of Minnesota during the recent session, and signed by the Governor. It is to become operative July 1, 1887.—Editor.]

A BILL

To regulate the practice of medicine in the State of Minnesota, and to license physicians and surgeons, and to punish persons violating the provisions of this act.

Be it enacted by the Legislature of the State of Minnesota.

Section 1. The governor of the State shall appoint a board of examiners, to be known as the State Board of Medical Examiners, consisting of nine members, who shall hold their office for three years after such appointment and until their successors are appointed;

Provided, That the members thereof first appointed under this act shall be divided into three classes, each class to consist of three. The first class shall hold office under said appointment for the period of one year, the second class for two years, and the third class for three years from the date of their appointment.

It is further provided that no member thereof shall be appointed to serve for more than two terms in succession, and no member of any college or university having a medical department shall be appointed to serve as a member of said board, two of which are homœpathic physicians.

Sec. 2. Said board of medical examiners shall elect a president, secretary and treasurer, shall have and keep a common seal. The president and secretary shall have the power to administer oaths. Said board of medical examiners shall hold meetings for examination, at the capital of this State, on the first Tuesday of January, April, July and October of each year and such other meetings as said board may from time to time appoint. Said board shall keep a record of all the proceedings thereof, and also a record or register of all applicants for a license, together with his or her age, time spent in the study of medicine, and the name and location of all institutions granting to such applicants degrees or certificates of lectures in medicine or surgery. Said register shall also show whether such applicant was rejected or licensed under this act. Said books and register shall be *prima facie* evidence of all of the matters therein recorded.

Sec. 3. All persons hereafter commencing the practice of medicine and surgery, in any of its branches in this State, shall apply to said board for a license so to do, and such applicant at the time and place designated by said board, or at the regular meeting of said board shall submit to an examination in the following branches, to-wit: Anatomy, physiology, chemistry, histology, materia medica, therapeutics, preventive medicine, practice of medicine, surgery, obstetrics, diseases of women and children, diseases of the nervous system, diseases of the eye and ear, medical jurisprudence, and such other branches as the board shall deem advisable; and present evidence of having attended three courses of lectures of at least six months each; said board shall cause such examination to be both scientific and practical, but of sufficient severity to test the candidate's fitness to practice medicine and surgery. When desirable said examination shall be conducted in the presence of the dean of any medical school or the president of any medical society of this State. After examination said board shall grant a license to such applicant to practice medicine and surgery in the State of Minnesota, which said license can only be granted by the consent of not less than seven members of said board, and which said license shall be signed by the president and secretary of said board

and attested by the seal thereof. The fee for such examination shall be the sum of $10, and shall be paid by the applicant to the treasurer of said board, to be applied by said board towards defraying expenses thereof—and such board may refuse or revoke a license for unprofessional, dishonorable or immoral conduct.

SEC. 4. The person so receiving said license shall file the same or a certified copy thereof with the clerk of the district court in and for the county where he or she resides, and said clerk of the court shall file said certificate or copy thereof, and enter a memoranda thereof, giving the date of said license and name of the person to whom the same is issued, and the date of such filing in a book to be provided and kept for that purpose, and said clerk of the court shall each year furnish to the secretary of said board a list of all certificates on file in his office, and upon notice to him of the change of location or death of a person so licensed, or of the revocation of the license granted to such person, said clerk shall enter at the appropriate place in the record so kept by him a memoranda of said fact, so that the records so kept by said clerk of the court shall correspond with the records of said board, as kept by the secretary thereof. In case a person so licensed shall move into another county of this State, he or she shall procure from the clerk of the court a certified copy of said license, and file the same with the clerk of the district court in the county to which he or she shall so remove, said clerk shall file and enter the same with like effect as if the same was the original license.

SEC. 5. This effect shall not apply to commissioned surgeons of the United States Army or Navy, to physicians or surgeons in actual consultation from other States or Territories, or to actual medical students practicing medicine under the direct supervision of a preceptor. Physicians whose practice extends into the teritory of this State from an adjoining State or Territory shall comply with the provisions of this act, and shall record their certificates with the clerk of the county in this State, whose county seat is nearest the residence of such applicant.

SEC. 6. Any person practicing medicine or surgery within this State without first having obtained the license herein provided for or contrary to the provisions of this act, shall be deemed guilty of a misdemeanor, and upon conviction shall be fined not less than $50 nor more than $100, or by imprisonment in the county jail not less than ten nor more than ninety days, or both fine and imprisonment. Any person shall be regarded as practicing, within the meaning of this act, who shall append the letters "M.D." or "M.B." to his or her name, or prescribe, direct, or for a fee recommend for the use of any person any drug or medicine or other agency for the treatment, care or relief of any wound, fracture or bodily injury, infirmity or disease. Justices of the peace and the respective municipal courts shall have jurisdiction over violations of the provisions of this act. It shall be the duty of the respective county attorneys to prosecute violations of this act.

SEC. 7. Chapter 125 of the General Laws of 1883, is hereby repealed. It is, however, provided that all persons licensed under said act shall be taken and considered as licensed under this act. And the secretary of the board herein provided for shall enter the names of such persons upon the register so kept by him as licensed physicians and surgeons, without application or fee upon the part of the person so licensed.

SEC. 8. This act shall take place and be in force from and after the 1st of July, 1887.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

New York County Medical Association—The International Congress—Proposed County Association in Brooklyn—Spastic Ataxia; the Scleroses of the Cord—General Shaler.

At the stated monthly meeting of the New York County Medical Association, held February 21, Dr. Charles A. Leale, who has for the past two years filled the position of President with so much credit both to himself and the Association, delivered an able address, on retiring from the chair, which was followed by one of like character by the President-elect, Dr. John Shrady. In his remarks Dr. Leale referred to the fact that from its membership was chosen the one not only to deliver the Address in Medicine at the last meeting of the British Medical Association, but who was also unanimously elected to be the President of the next International Medical Congress. "We miss his genial face to-night," he said, "but the name of Dr. Austin Flint will ever remain upon our records as the representative man." The Association, he went on to say, had now completed its third year, and those who had been constantly connected with it since its birth had great reason to rejoice at the amount of excellent work its members had accomplished, and at its continually increasing power.

In the course of his address Dr. Shrady said: I beg to call your attention to the coming International Medical Congress in the autumn, to which every Fellow, in common with the profession at large, is expected to give his moral support. Happily, the difficulties which beset the preliminary committees, and which were exaggerated with a purpose, have been overcome. Individual and sectional jealousies have been allayed. The unduly ambitious were rebuked by the prompt acceptance of resignations, and the embarrassments which were supposed to forebode defeat—and I regret to say that many were unpatriotic enough to desire it—have only ended in the attainment of harmony of action. Some needed the lesson that there was to be no background for the display of incandescence, and that sometimes even the electric light might cast green and annoying shadows. Our Medical Republic is now at peace, and amply able to receive visitors from abroad, and render their stay agreeable, as well as perhaps profitable.

It is worthy of note that a movement is now on foot to organize a County Association in Brooklyn,

like that in this city, which shall be in affiliation with the State Medical Association and support the National Code of Ethics. A very satisfactory informal meeting of the Fellows of the State Association residing in Brooklyn was held in February to consider the advisability of such a step, when, by a unanimous vote, a committee consisting of Drs. Edward R. Squibb, chairman, Joseph C. Hutchison, Avery Segur, and E. H. Squibb, with power to add to their number, was appointed to draft a plan of organization and call a meeting by circular of all physicians in the city in accord with the principles of the Association.

At the last meeting of the New York Academy of Medicine the paper of the evening was by Dr. C. L. Dana, one of the ablest and most studious of our neurologists, whose subject was *Spastic Ataxia, Functional and Organic, and the Combined Scleroses of the Spinal Cord.* The form of disease to which he referred was that interesting one so admirably described under the name of ataxic paraplegia by Dr. Gowers in a clinical lecture delivered at University College Hospital London, February 23, 1886; and the object of the paper, he said, was to call attention to a class of cases, not very rare, which corresponds to some extent to ordinary progressive locomotor ataxia, and to a much more marked degree to spastic paraplegia. These it was important to recognize both on account of the prognosis and treatment. He had been able to collect forty five cases of combined sclerosis, observed by various authorities, and among them were two which, with their autopsies, were reported for the first time in the present paper. All but sixteen of the number he felt obliged to exclude on account of various circumstances which he thought prevented them from properly coming under the head of the class of cases now under discussion.

In describing the symptoms Dr. Dana said there was gradually increasing weakness of the limbs, with some loss of power of coördination; but the lancinating pains of tabes were for the most part entirely absent, while the patellar tendon reflex was increased, instead of being lost, as in the latter affection. The "Argyle-Robertson" pupil was also seldom seen. As the disease advanced, the muscular power became more and more impaired; while the incoördination did not proportionally increase, but was overshadowed by the increasing paralysis. The increased myotatic irritability continued, and stiffness and rigidity developed as its consequence. "Thus," as Dr. Gowers had graphically described it, "the aspect of the patient comes to be that of spastic paraplegia; the feet drag as the patient walks, shake from clonus when he steps, and the legs are hauled forward with visible effort at each step." Sexual power was often lost early in the disease. The sphincters were frequently impaired, but the impairment rarely reached a considerable degree. There was, as a rule, no wasting of the muscles, and no change in their electrical excitability.

The pathological condition found *post mortem* by Dr. Dana was chronic cervico-dorsal myelitis, affecting the lateral columns primarily, the gray matter secondarily. In a case the drawings from which he exhibited, there were secondary degenerations in the lateral columns, and ascending and descending development of sclerosis in the columns of Gall. In addition, there was sclerosis of the crossed pyramidal tracts, most marked in the dorsal region, and sclerosis in the cerebellar tracts to a moderate extent. The sclerosis in the columns of Gall was most marked in the cervical region. According to Gowers, in all cases the spinal cord has presented sclerosis of both posterior and lateral columns; but the precise extent and degree of the degeneration seem subject to considerable variations. As a general rule, he says, the sclerosis of the posterior columns differs from that of tabes in two particulars: First, it is not more intense, and often is less intense, in the lumbar than in the dorsal region of the cord. Sometimes, indeed, in the middle and lower parts of the lumbar region the posterior columns may be free from sclerosis, although it is considerable in the dorsal region and at the junction of this with the lumbar enlargement. The second difference is that the sclerosis has rarely the special intensity in the root-zone of the postero-external column that characterizes the lesion of tabes.

The prognosis as to life, Dr. Dana remarked, was better than in simple tabes dorsalis. The disease has little tendency to cause death; indeed, according to Gowers, the fatal cases have, for the most part, been untypical, and do not convey an accurate idea of the disease. The chief danger to life was said to be from the accidents common to all chronic spinal affections, and especially from kidney disease secondary to retention. So far as the prospect of recovery was concerned, the prognosis was unfavorable, and one case, Dr. Dana said, was on record in which the affection had already lasted thirty years.

The treatment did not vary greatly from that of locomotor ataxia. Rest was a very important element, and electricity, both static and in the form of the Faradic current, was useful. Orthopædic appliances to support the tottering limbs were often of great service. Antisyphilitic treatment should always be given a thorough trial, and large doses of iodide of potassium were not infrequently called for. In conclusion, Dr. Dana said that while no name had as yet been found which properly described the disease clinically, he thought the designation "combined fascicular sclerosis" was applicable from a pathological point of view.

In the discussion of the paper Dr. M. Allen Starr, who recently delivered the Middleton Goldsmith lectures, under the auspices of the New York Pathological Society, on "Multiple Neuritis," objected to the name proposed by Dr. Dana; claiming that the changes in the cord met with after death were not entirely fascicular. The diagnosis between tabes and combined sclerosis, he remarked, was often very difficult; and, again, the occurrence of general paresis in connection with tabes sometimes made us hesitate in arriving at a diagnosis. Dr. E. C. Seguin related a case of his own in which he said the lesions seemed to show that there were instances in which pathological changes present were intermediate between fascicular sclerosis and disseminated sclerosis. Dr.

Jacobi suggested that perhaps the sclerosis followed the course of minute blood-vessels whose extensive network, it had been shown, served to connect and bind together the various fasciculi of the spinal cord. This anatomical fact, he thought, might offer a satisfactory explanation of these mixed forms of sclerosis. He regarded the subject of the paper as one of great importance to general practitioners, on account of the frequency with which disease of the spinal cord was now met with.

The Governor has at last given his official approval of the order made some nine months ago by Mayor Grace removing General Shaler from the office of President of the City Board of Health. P. B. P.

SAENGER'S CÆSAREAN OPERATION.

Dear Sir:—In his excellent paper entitled "Can the Cæsarean Section be Safely Substituted for Craniotomy in the United States at the Present Time," published in THE JOURNAL of February 12, 1887, and in the scientific conclusions of which I fully concur, my friend, Dr. J. Taber Johnson, in one place mentions me in a way that may give rise to misunderstanding, if not corrected. He says: "To quote from recent authority, in the October number of the *American Journal of Obstetrics*, page 1021, by Garrigues, who claims that the Sänger method should as properly be called by his name as by Sänger's, and further, that there is really nothing in this 'method' after all, as the most successful operators get on better without it—Garrigues says," etc. To those who have not read my paper, or who have forgotten the particulars of it, the first assertion looks as if I had laid claim to the so-called Sänger method, but a reference to the passage alluded to in my paper will clearly show that this is by no means so. I said: "When he (Sänger) says that American physicians might as well call the improved Cæsarean section mine as his, I quite agree with him, but I make haste to add that *one thing would be as ridiculous as the other*. The improved Cæsarean section is a beautiful outgrowth of general surgical and special gynecological development, an evolution due to the combined efforts of many men working independently in different countries."

The second assertion put into my mouth, viz., that there is really nothing in this "method," after all, will be very apt to be misunderstood. The cause of this that the words, "Sänger's method," have a double meaning. I show, in the paper referred to, that the only original idea of Sänger was the resection of the two slices of muscular tissue of the uterus contiguous to the incision made in that organ, but unfortunately, not only German, but English, French and American writers have got into the habit of calling the whole improved Cæsarean section, with its manifold steps due to different men, by Sänger's name. In the above-mentioned quotation from Dr. J. T. Johnson, it must be well understood that in the first sentence he refers to the whole improved Cæsarean section, while in the second he has only in view that part of Sänger's so-called method which really belongs to him, namely, the resection of muscular tissue of the womb, and by no means all the other points entering into the composition of that which is erroneously attributed to Sänger. It is Sänger's original proposition which is objectionable, and has been given up, while all the res of the improved Cæsarean section is, in my opinion, highly recommendable.

Very truly yours,

H. J. GARRIGUES, M.D.

155 Lexington Ave., New York, March 10, 1887.

"THE ETIOLOGY AND CURE OF ASTHMA."

Dear Sir:—In the issue of THE JOURNAL for Feb. 26 appeared a short review, under the above heading, by Dr. E. F. Ingals, which is likely to mislead those not familiar with the subject. I was astounded at the manner in which Dr. Ingals perverts the meaning of my words. *Firstly*, he claims priority for Dr. Wm. H. Daly against Hack. As the paper of Dr. Daly, quoted by Dr. Ingals, deals exclusively with hay asthma, and as my paper and quotations from Hack entirely exclude the consideration of hay asthma, there can be no discussion as to priority.

If Dr. Ingals is still confused on this point, I should earnestly advise him to read Hack's writings before discussing them.

The second point in Dr. Ingals' review states: "It is claimed that nearly all cases of asthma are the result of disease in the nasal cavities." I very distinctly stated in the introduction to and in the course of my paper, that the only form of asthma which I wished to consider was that perennial form which is more or less independent of the seasons, and not complicated with organic disease, etc., namely,—"*Asthma nervosum seu essentiale.*" This is, comparatively speaking, a rarer form of asthma (*vide* Niemeyer's Spec. Path. and Therap., 10th ed.), and therefore the reproach quoted above falls to the ground.

Dr. Ingals' third point is: "It is also claimed that cauterization of the nasal mucous membrane will cure the majority of the cases of asthma." This statement is controverted by my objection to Dr. Ingals' second point. Very truly yours,

EDWIN J. KUH, M.D.

Central Music Hall, Chicago, March 9, 1887.

ASSOCIATION ITEMS.

AMERICAN MEDICAL ASSOCIATION.

The Thirty-eighth Annual Session will be held in Chicago, Ill., on Tuesday, Wednesday, Thursday and Friday, June 7, 8, 9 and 10, commencing on Tuesday, at 11 A.M.

"The delegates shall receive their appointment from permanently organized State Medical Societies, and such County and District Medical Societies *as are recognized by representation in their respective State Societies*, and from the Medical Department of the Army and Navy, and the Marine Hospital Service of the United States.

"Each State, County, and District Medical Society entitled to representation shall have the privilege of sending to the Association one delegate for every

ten of its regular resident members, and one for every additional fraction of more than half that number: *Provided*, however, that the number of delegates for any particular State, territory, county, city or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the Code of Ethics of the Association."

Secretaries of Medical Societies, as above designated, are earnestly requested to forward, *at once*, lists of their delegates.

Also, that the Permanent Secretary may be enabled to erase from the roll the names of those who have forfeited their membership, the Secretaries *are, by special resolution*, requested to send to him, annually, a corrected list of the membership of their respective Societies.

SECTIONS.

"The Chairmen of the several Sections shall prepare and read, in the general sessions of the Association, papers on the advances and discoveries of the past year in the branches of science included in their respective Sections. . . " *By-Laws*, Art. II, Sec. 4.

Practice of Medicine, Materia Medica and Physiology.—Dr. J. S. Lynch, Baltimore, Md., Chairman; Dr. J. B. Marvin, Louisville, Ky., Secretary.

Obstetrics and Diseases of Women and Children.—Dr. F. M. Johnson, Kansas City, Mo., Chairman; Dr. W. W. Jaggard, Chicago, Ill., Secretary.

Surgery and Anatomy.—Dr. H. H. Mudd, St. Louis, Mo., Chairman; Dr. A. M. Pollock, Pittsburg, Pa., Secretary.

State Medicine.—Dr. George H. Rohé, Baltimore, Md., Chairman; Dr. Walter Wyman, U. S. M. Hospital, New York, Secretary.

Ophthalmology, Otology and Laryngology.—Dr. X. C. Scott, Cleveland, O., Chairman; Dr. J. H. Thompson, Kansas City, Mo., Secretary.

Diseases of Children.—Dr. DeLaskie Miller, Chicago, Ill., Chairman; Dr. W. B. Lawrence, Batesville, Ark., Secretary.

Oral and Dental Surgery.—Dr. John S. Marshall, Chicago, Ill., Chairman; Dr. A. E. Baldwin, Chicago, Ill., Secretary.

Medical Jurisprudence.—Dr. I. N. Quimby, Jersey City, N. J., Chairman; Dr. H. H. Kimball, Minneapolis, Minn., Secretary.

A member desiring to read a paper before a Section should forward the paper, or its *title* and *length* (not exceeding twenty minutes in reading), to the Chairman of the Committee of Arrangements at least one month before the meeting.—*By-Laws.*

Committee of Arrangements.—Dr. Charles Gilman Smith, Chicago, Ill., Chairman.

Amendment to By-Laws.—Create a new Section, to be known as the Section on Dermatology and Venereal Diseases.

Wm. B. Atkinson, M.D.,
Permanent Secretary.

Philadelphia, 1400 Pine St., S. W. cor. Broad.

Chicago College of Pharmacy.—At the recent annual meeting of the College, George Buck was elected President; Judson S. Jacobus, Treasurer; and D. H. Galloway, Secretary.

INTERNATIONAL CONGRESS.

NINTH INTERNATIONAL MEDICAL CONGRESS.

In reference to demands from various quarters for information as to hotel rates here in Washington, and what arrangements have been made for a reduction of the same, by our committee, in favor of those who will attend the International Medical Congress, I beg to announce the following scale of prices:

The Arlington Hotel, from $3 to $3.50 per day.
Riggs House, from - - $3 to $3.50 per day.
Willard's Hotel, from - $3 to $3.50 per day.
Metropolitan Hotel, - - - - $3.00 per day.
National Hotel, - - - - - $3.00 per day.

Other hotels, conducted on European style, will furnish rooms at from $1 to $2 a day. First-class lodging houses will also furnish rooms from $1 to $1.50 a day.

A. Y. P. Garnett, M.D.,
Ch'n Com. of Arr. Int. Med. Congress.
1319 New York Ave., Washington, D. C., March 14, 1887.

Since the statement concerning reduced rates on the transatlantic steamers, given in this journal for Feb. 26, page 241, we have been officially informed by the Committee of Arrangements that, in addition to the steamship lines then given, the North German Lloyd Line has agreed to give physicians and members of their families the round trip from Bremen to New York and return at $187.50, and the Cunard Line agrees to deduct ten per cent. from usual rates for members of the Congress only.

We are further authorized to state that Albaugh's and the National Theatre and Willard's Hall, in Washington, have been secured for the use of the Congress. The last-named will be headquarters and the place of registration.

Congress, before its recent adjournment, appropriated $10,000 from the National Treasury to aid in defraying the necessary expenses of the Medical Congress.—Editor.

MISCELLANEOUS.

Western Reserve University.—A very elegant and complete new building for the Medical Department of Western Reserve University in Cleveland, Ohio, had been completed and was formally dedicated on the evening of March 8, 1887. The entire cost, about $175,000, was the donation of Mr. John L. Woods, a wealthy and liberal citizen of that city.

NOTES AND ANSWERS.

ARMY SURGEONS ON SICK LEAVE.

Sir:—An answer to the following question will be highly appreciated: Can an Assistant Surgeon U. S. A. on sick leave practice medicine in the town where his home is, hold a State position, and keep a drug store, all at the same time?

Inquirer.

Key West, Fla., March 7, 1887.

We are not familiar with the Army regulations concerning the rights and duties of Assistant Surgeons on *sick leave*. Will some reader give "Inquirer" a correct answer?—Editor.

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ORIGINAL ARTICLES.

DEEP TUBING OF THF LARYNX AS A SUBSTITUTE FOR INTUBATION.

With a Report of Nine Cases and Presentation of New Instruments.

Read before the Chicago Medical Society, March 7, 1887.

BY A. E. HOADLEY, M.D.,

PROFESSOR OF ANATOMY, CHICAGO COLLEGE OF PHYSICIANS AND SURGEONS, PROFESSOR OF SURGERY IN THE CHICAGO POLICLINIC, ETC.

In April, 1886, I became convinced that intubation of the larynx was a justifiable surgical procedure, and a valuable substitute for tracheotomy in selected cases. I therefore procured a set of the O'Dwyer instruments and tubes. Although I had handled the tubes and seen them introduced, and a year previous had introduced them myself on the cadaver, I did not until this time give serious consideration to the position of the tube after the introduction. I had no difficulty in coming to a conclusion in this matter. From my knowledge of the larynx, and the contour of the head of the tube, I decided that the head of the tube was designed to rest within the larynx, with its projecting flange resting upon the false vocal cords, with the straight part of the tube behind resting against the posterior straight wall of the larynx. (Fig. 1.)

It was not until I had in this manner tubed five cases that I was informed that it was not the design of the inventor, Dr. O'Dwyer, to have the head of the tube rest within the larynx, but on the contrary to have the flange project laterally and posteriorly above the opening into the larynx, resting upon the arytenoid cartilages behind, and the aryteno-epiglottidian folds on each side, with the head of the tube in such a position that when the epiglottis is closed, it would come in direct contact with the tube, closing its orifice but allowing its flange to project beneath it. (Fig. 2.) It now became necessary for me to either acknowledge my error and turn the tube around, or justify the position and claim an improvement. I examined the five cases and was fully convinced that the deep position was at least worthy of further trial. I can now present a summary of nine cases which I have thus treated. Seven of the operations were performed for other physicians; for Drs. R. N. Hall, G. M. Emrick, E. E. Holroyd, Wm. Rittenhouse and Caldwell. Two were performed where there had been no physician in attendance until I was called and found it necessary to tube immediately. I have not as yet had an opportunity of watching the patients as closely as I could desire, and for the main facts relative to the subsequent behavior of the patients I am indebted to the physician in attendance. Of the two cases above referred to, I saw one six hours after the operation. She was perfectly comfortable as far as breathing and wearing the tube were concerned. The other died twelve hours after the operation, before I saw her a second time.

FIG. 1.—Deep tubing.

FIG. 2.—Intubation.

The ages of the patients ranged from 2 to 6 years. All had diphtheritic laryngeal stenosis. They were all bad cases and all died in from twenty-four hours to four days after the operation. The stenosis was promptly relieved in all. Eight out of the nine were able to drink several consecutive swallows immediately after the operation, and continued to do so as long as they could swallow. The eight suffered little or no pain from the presence of the tube, nor was the cough particularly troublesome. Four coughed but very little. In one the presence of the tube in the larynx did not excite cough; on the contrary, there was less coughing than before the tube was introduced. In one case the tube was coughed out, and a larger tube was introduced, which remained until the child died from extension of the exudate below the tube. In no case was there subsequent obstruction above the tube. In one case the obstruction seemed to be in the fauces and pharynx, and I feared that tracheotomy would be necessary, but "deep tubing" gave prompt relief. In two cases while

pressing the tube down deep into the larynx, it was felt to slip by an obstruction and pass beyond reach. In these two cases I believe the head of the tube was lodged in the ventricle of the larynx, resting upon the true vocal cords. There was no unusual inconvenience from the presence of the tube in this situation. I removed the tube in one of these cases and I had as little difficulty as in any, which I think would be equally true had the child been living. I might state while giving this opinion, however, that I have never extracted a tube from the living subject.

One case suffered severe and continual pain from the presence of the tube, and could not drink one drop without strangling and having a violent fit of coughing following the attempt; she was fed by means of a tube in the œsophagus. She died on the fourth day from pneumonia, the development of which was probably favored by the irritation of the tube. This was Olga L., a girl 5 years of age, a patient of Dr. Emrick's. About two years previous, she swallowed, by mistake, some concentrated lye, causing extensive destruction of the tissue followed by a violent inflammation. After a long and desperate struggle she recovered her general health; but there remained two almost impervious strictures of the œsophagus. She had been under my care six months for the surgical treatment of the strictures when she contracted diphtheria, for relief of which the "deep tubing" was practised. It was to these changes in the pharynx and œsophagus caused by the lye that I attributed her intolerance of the laryngeal tube.

In seven cases death was caused by constitutional diphtheria, in one by extension of the exudation below the tube, and in one from pneumonia. While this summary of nine fatal cases of intubation of the larynx for diphtheria would show that intubation does not cure; it does not prove that intubation is an unjustifiable practice. On the contrary, it shows that the practice is one capable in the simplest manner of affording the greatest possible relief and allowing the patient to die a less horrible death than that of suffocation, and at the same time give one more chance for life.

In comparing the two methods of introducing the tube, I would call attention to what I regard as the most objectionable feature of the O'Dwyer method. It is the projection of the head of the tube over the top of the larynx in such a manner that it prevents the glottis from folding down and adapting itself to the top of the larynx in the usual manner. This leaves a margin of laryngeal mucous membrane exposed, which has been in the habit of being covered at every act of deglutition. The projections of the tube do not cover it perfectly, so that in every act of swallowing the food is allowed to come in contact with this surface, which is excessively sensitive to everything but air, and must necessarily excite coughing. I have no doubt but what the glottis will close the orifice of the tube perfectly, thus preventing any food from getting into the tube, but it cannot close the larynx by the side of the tube, and food, fluids especially, are forced into the larynx, thus causing the most distressing paroxysms of coughing at every attempt at swallowing. All this is obviated by the method that I have adopted, as the head of the tube is within the larynx and well below the opening, so that the glottis does not touch the tube and can therefore perfectly guard the larynx.

In reference to the removal of the tube, it is my opinion that the tube can be more quickly engaged by the extractor while it rests within the larynx, than while the head of the tube rests above the larynx. The head of the tube being surrounded by the upper extremity of the larynx, greatly facilitates the operation, as it is not easy to get the extractor down by the side of the tube, which is the source of the greatest annoyance with the tube in the high position. With reference to the danger of introducing the tube into the trachea, I would state that it is certainly a remote danger, as any one will admit that attempts to push the head of a well fitting tube beyond the chink.

The modifications in the tube that have suggested themselves for the better adaptation to this mode of intubation, and which have been constructed for me by Sharp & Smith, of Chicago, are:

Shortening the tube to the length of the larynx, or perhaps a trifle longer. (Figs. 1 and 3.)

Fig. 3.

Fig. 4.

Making the head of the tube conform more nearly to the shape of the interior of the upper part of the larynx.

Making the upper surface of the head of the tube slightly cup shaped for the purpose of favoring the introduction of the extractor.

Having that portion of the posterior border of the tube, which corresponds to the arytenoid cartilages stand on a plane anterior to that of the rest of the tube, so that the pressure at this point may be slight. As the arytenoids are supported by muscles we should avoid putting them on the stretch. Constructing the obturator so that it will project three-eighths of an inch from the lower end. My tube, being a little shorter than the most convenient length for introduction, the longer tip of the obturator enables one to pass the tip to the proper position below the chink, when the tube should be detached, and pressed home with the finger before the obturator is withdrawn.

The greatest objection to using the tubes of the present construction for "deep tubing" is their length. The O'Dwyer tubes (Fig. 4) when placed deep in the larynx, will reach to the seventh ring of the trachea, as shown by an autopsy. This, owing to the mobility of the lower end of the tube in the trachea in the varying positions of the neck, is a source of irritation exciting cough and inducing pain. One of my patients would invariably point to that locality when asked to locate the tube.

Finally, I would recommend "deep tubing" of the larynx as being preferable to "intubation," even though the long tubes are used, holding that long tubes are preferable only in very exceptional cases.

No. 683 Washington Boulevard.

EMMET'S NEW OPERATION FOR PROLAPSE OF THE POSTERIOR VAGINAL WALL,

Or So-called Laceration of the Perineum.

Abstract of a Paper read before the Obstetrical Society of Philadelphia, February 3, 1887,

BY J. M. BALDY, M.D.,

OF PHILADELPHIA.

Since I have become familiar with the subject it has each day seemed more incomprehensible to me why the Emmet operation has not come into more general use. I have come to the conclusion that the fault lay in defective description of the operation as set forth in most cases, and in the fondness of men for working on the skin perineum, and not in the operation *per se*. The operation, as described by most of the writers on the subject, is hopelessly mixed up with long discourses on side issues. Too much is left to be understood from diagrams alone, with insufficient attention to details in the procedure. These are prominent faults in the descriptions given by Drs. Emmet and Dudley. Dr. Dudley also obscures his paper, as presented in "Pepper's System of Medicine," by introducing several "modifications." The first of these is one of the essential steps in the operation, though not clearly described by Dr. Emmet in the third edition of his "Gynecology." It consists in carrying the denudation into the vaginal sulci. The second consists in passing deep sutures where Dr. Emmet passes superficial ones. In reality, Dr. Emmet's "superficial" stitches are only relatively superficial. His description of them distinctly calls for their being passed deeply enough to include the posterior wall. My excuse, therefore, for offering a contribution on such an old subject, is to attempt to make the steps of this operation clear; and if I seem tedious in detail to those who are familiar with the subject, I hope you will bear with me patiently.

The belief that the female perineum, or perineal body, gives any support to the pelvic viscera, is an erroneous one. The distance between the uterus and the perineal body is quite measurable, and the intervening tissues, which consist merely of the mucous vaginal canal and surrounding connective tissue, are by no means of such a firm character as to be able to uphold the uterus either *per se* or through the support given by the perineal body below. The only aid this body could give the supposed support would be by the uterus resting directly upon it. Dr. Emmet puts it very happily when he says "it would be as rational to assume that a man's pantaloons were supported by the legs resting on the instep or foot." The principal support of the pelvic organs is their ligamentous attachments, on the same principle as the organs contained within the abdominal and thoracic cavities are suspended. A good proof of this is the fact that we constantly see women going about their daily work who have their superficial or skin perinea, not including the fasciæ or muscles, torn even to the sphincter ani, and who never have suffered any inconvenience therefrom, and who probably never will. The cause of all the various ailments following parturition, beginning procidentias, etc., will be found inside the vagina on the posterior wall. If any one will place his fingers on the posterior vaginal wall of a woman who has never borne a child, and move them first to one side and then to the other, he will find a firm resistance to pressure in any direction. If he now introduce his finger into the vagina of a woman who has had an injury to the pelvic floor during parturition, he will fail to meet with the resistance which he met in the first case. He will find instead a *rectocele* of greater or less extent, with deep divulging sulci running up each side of the recto vaginocele, into which he can easily sink his finger without finding much resistance, and yet the external or skin perineum may be perfect.

To fully and clearly understand this change it will be necessary to consider the attachments of the pelvic viscera. The pelvic fascia descends until it reaches its attachment on a line drawn from the symphisis pubis to the spine of the ischium, where it divides into two layers, the outer or obturator, and the inner or recto-vesical fascia. This line of separation in great part also corresponds to the line of attachment of the levator ani and coccygeus muscles. The levator ani extends from this attachment downward, and passing under the vagina is inserted into the rectum at different points. It is covered on its upper surface by a reflexion of the recto-vesical fascia, which binds it closely to the vagina and sphincter vagina muscle, and on its under surface by a reflexion of the obturator fascia, which binds it closely below. The transversus perinei, when it exists at all, arises from the pubic arch, and its fibres are lost in the sphincter vagina directly under the vagina. In speaking of the use of the sphincter vagina Dr. Goodell says that "the property of this muscle is to pull down the rigid clitoris into contact with the male organ, to squeeze out the contents of the vulvo-vaginal glands, and to compress the dorsal vein as well as the bulbs of the vagina, so as to obstruct mechanically the current of blood and produce a turgescence of these erectile organs." If this be correct, we have an explanation of the loss of sexual power and desire so often seen in women who have suffered from a tear of this muscle. The recto-vesical fascia sends out reflexions from its bony attachments also over the vagina as well as over the other pelvic contents, forming the strong ligaments which

hold them in place and give firm support to the different venous plexuses; amongst others the vaginal plexus.

The advancing head of the child, under certain circumstances, crowds the soft parts in advance as it sweeps along the pelvic floor and the fasciæ and muscles just described, becoming over-distended, separate and retract, forming deep sulci laterally. Frequently the injury is sub mucous. The external soft parts or skin perineum may be torn or not; very often it remains perfectly intact. There is no question in my mind that this injury is caused with unnecessary frequency both by the injudicious use of the forceps and by our vain efforts to "support the perineum." As a rule our patients would be far better off if we were to throw our forceps away and keep our hands off the perineum, as far as any idea of giving it support is concerned. If we hold the head back the vis-a-tergo must be spent somewhere, and that somewhere is the pelvic floor, which suffers accordingly.

The mere rupture of the fasciæ and muscles would cause the woman little trouble of themselves, but the results are far-reaching. The fasciæ being the chief support of the blood vessels, we now have these large veins with no support but their own walls; consequently we soon have a chronic engorgement, with dilatation and a very sluggish return of blood from the parts. The viscera become engorged and heavy. The anterior wall, which has lost its main support—the posterior wall—begins to roll down and out, forming a cysto-vaginocele; the posterior wall gradually pushes forward and bulges from the vaginal orifice as a recto-vaginocele. The fundus uteri becomes or remains enlarged and falls backward from its weight and the traction of the vaginal wall. Gradually but surely the ligamentous attachments of the uterus are stretched and the whole organ slowly descends, dragging everything with it. We eventually have all the phenomena of complete procidentia if things go on unheeded. This theory of the injury in the female pelvis in parturition is by no means new. It is substantially the same view held by Emmet and expressed by Hadra, in the *American Journal of Obstetrics*, April, 1884, by Wylie, in the *N. Y. Medical Record*, March, 1885; Skeene, in *N. Y. Medical Journal*, April, 1885, and by James Price, in a paper read before the Philadelphia County Medical Society last spring.

The old operations, devised on the supposition that the injury of the perineal body was the cause of all the symptoms, included far more labial tissue than had been involved in the tear, and were entirely inefficient for restoring the pelvic floor. They caused an unnecessary barrier to coition, and frequently left the patient with a certainty of return of all her ailments, and a probability of the tear being reproduced at a subsequent labor.

The only satisfactory surgical procedure suggested as a cure of the injury is that of Dr. Emmet, for "restoration of the pelvic diaphragm." The patient is placed in the dorsal position, and the labia separated by assistants; hook a tenaculum or a ligature (which remains a permanent landmark to the end of the operation) into the crest of the rectocele and draw it upwards, without undue traction, to the meatus, and place it in the hand of an assistant. Hook another tenaculum into the labial tissue on each side directly opposite to or in the lower caruncle or remains of the hymen. If slight traction in diverging directions be made in all the tenacula at the same time three triangles are formed having the crest of the rectocele for their common apex. The base of the first is a line drawn from caruncle to caruncle, and the bases of the others a line drawn from each caruncle to a point far up the sulcus of the same side. On denuding these surfaces and bringing the three tenacula together, "the vaginal canal will be found reduced in size, the perineum will have been apparently drawn up toward the arch of the pubes, and the tissues of the previously gaping outlet will have been rolled in until the vaginal entrance is no longer larger than that of any female who has not given birth to a child at full term." The posterior wall is brought firmly up against the anterior wall and bladder, giving them them their natural and necessary support, and preventing their rolling down and out. Care must be taken not to denude too much surface in the sulci, as failure may result, the sutures cutting out from undue traction. The scissors should be used for all plastic work in the vagina. Any one becoming accustomed to their use will never go back to the knife. The bleeding is infinitely less and much time is saved by the celerity with which they can be handled.

The most essential part of the operation is the introduction of the sutures. They are passed from the apex of each sulcus toward the operator. A tenaculum is hooked into the apex of one of the sulci and drawn away toward the cervix uteri, thus preserving the line on which the sutures are to be introduced. The sutures are then all passed toward the operator to the bottom and median line of the sulcus, plenty of tissue being included; the sutures emerge at the median line of the sulcus and are reintroduced in the same spots and carried away from the operator, emerging just beyond the freshened edge of the rectocele directly opposite the original point of introduction, on the other side of the sulcus, thus taking a V-shaped course. The number of sutures is usually four or more. The other side is sutured in the same manner. When these sutures are all drawn up into place and closed, there remains a small triangular space of freshened surface in front of the rectocele, which is closed by the so-called crown stitch and one or two superficial external stitches. The crown stitch is introduced through labial tissue at the lower caruncle, the original point of introduction of one of the tenacula carried across through the crest of the rectocele and then through labial tissue at the lower caruncle on the opposite side. All the other sutures are now lost to view within the vagina. The resulting shallow line directly in the median line of the perineum is closed by one or more superficial external stitches. They are passed deep enough to include a portion of the posterior vaginal wall.

The day for plunging a great perineal needle through glutoid tissues, skin, muscles, fasciæ, nerves

and blood-vessels, is past. It is as much a relic of barbarism as searing the stump of an amputation to stop hæmorrhage, and causes much pain and suffering. The material of the suture is immaterial. Catgut can be either shotted or tied. As moisture causes the gut to swell, it should be shotted as soon as passed and fastened to the pubic hair with a pair of hæmostatic forceps. This will keep them out of the way of the operator. Dr. Emmet always uses silver wire twisted and then shotted so as to be easily found; the end is bent over and lies flat on the tissues. Silkworm gut should always be shotted. It makes an excellent suture, and forms a good splint to the tissues. Whatever is used, the stitches are equally hard to find and remove. A very easy method for either wire or gut is the use of "Aveling's wire coil." These can be made by wrapping a piece of silver several turns around a straight needle or other staff, to form a close coil about half an inch in length. This coil is slipped over the two ends of the suture and secured in its proper place by a compressed shot. In removing, snip off the shot, remove the coil, and the suture has ends as long as the coil was.

The after-treatment is very simple. If the patient would stay quietly in bed she would recover with perfect union without the doctor's attention. As a rule the patient complains of no pain, and opium and alcohol are not needed. The bowels are kept soluble from the first; and the urine is passed every four or five hours, the patient getting on her hands and knees if necessary. There is no necessity for binding the knees together, nor for keeping the woman in one position for days. The stitches may be taken out on the eighth day.

A CASE OF INTRA-LIGAMENTOUS OVARIAN CYST; GENERAL PERITONITIS; UNIVERSAL ADHESIONS; OVARIOTOMY; RECOVERY.

A Paper read before the Central Kentucky Medical Association.

BY L. S. McMURTRY, A.M., M.D.,

OF DANVILLE, KY.

FORMERLY PROFESSOR OF ANATOMY IN THE KENTUCKY SCHOOL OF MEDICINE, ETC.

In previous reports of cases of ovariotomy to this Society I have described the technique of the operation, and discussed points relating to the diagnosis and pathology of ovarian tumors. So much has been written of late upon this subject, and such brilliant results have been obtained by many operators, that an eminent authority suggests the idea that the last words are said upon the subject. While this degree of perfection may apply to a few expert operators working amid the dense population of certain European countries, the subject of ovariotomy cannot be regarded "a closed chapter" by the profession of the United States, where a large population is scattered over a vast area and the work necessarily distributed among a large number of operators. Hence I make no apology for reporting in detail the following difficult and complicated case, illustrating, as it does, so many important points in advanced abdominal surgery.

On November 18, 1886, I was called to Williamsburgh, Ky., by Dr. E. S. Moss, of that town, to see Mrs. G. W., aged 29 years, the mother of six children, the youngest being 3 years of age. The patient was confined to her bed, vomiting daily, and suffering severely from the effects of intra-abdominal prepuce. The tumor was first observed two years ago. Six weeks previous to my visit she was tapped and a large quantity of fluid drawn off. This was followed by a severe attack of general peritonitis, the temperature ranging above 105° F., during which her life was almost despaired of by her physician. Three weeks before my visit she was tapped the second time, and the fluid again rapidly accumulated. A careful physical examination confirmed the diagnosis and suggested extensive adhesions.

The operation was performed at 11 o'clock on Thursday, November 18, 1886, the following gentlemen being present: Drs. E. S. Moss, Gatliff, Watkins, Parker, Blain, and Ellison. Dr. Gatliff administered ether, and Dr. Moss kindly assisted me throughout the operation. On making the incision through the abdominal wall I found the peritoneum and cyst firmly adherent, and dividing this layer the tumor was opened. Turning the patient on her side a large portion of the contents was discharged. Introducing my hand, the tumor was found to be multilocular; the additional compartments were torn open and emptied. At this stage of the operation I was first able to appreciate the immense size of the cyst and the extent of adhesion. Only three weeks having elapsed since the last tapping, and the fluid not having fully refilled the sac at the time I saw the patient, I had failed to realize the immense size of the sac. I now discovered that the tumor extended from Douglas's cul-de-sac to the diaphragm, and that the adhesions were absolutely universal.

Being unable to evert the sac, I sought for some unattached point through which I might gain entrance to the peritoneal surface and remove the cyst by enucleation. In this I failed, for the preceding peritonitis had firmly fused the peritoneum and cyst wall, leaving no unattached point. To determine this point thoroughly I enlarged the incision from three to about five inches. Finding it impossible to gain an entrance by an unattached point, I began the dissection of the cyst with scalpel and forceps at the edge of the incision. I succeeded in getting "a hold" in this way, and proceeded cautiously, but as rapidly as I could, in the work of enucleation. I stripped the cyst from the pelvis, the bladder, and the whole surface of the womb, from the ascending, transverse and descending colon. I then stripped the small intestine and omentum from the cyst. The latter was extensively and firmly adherent, and required a number of ligatures. I was careful to avoid injury to the ureters on each side, an accident not unknown in such cases, and, of course, one of the utmost gravity. The lower portion of the cyst I found included between the folds of the broad ligament, and had to be carefully enucleated. The tumor sprang from the right side. When all the adhesions were

separated the tumor came away without a pedicle. The left ovary was found to be normal, and hence was not removed.

The toilette of the peritoneum was tedious and exacting; many bleeding points had been secured with forceps and many were ligatured. After securing all bleeding points, the abdomen was washed out with pure warm water, and I began the introduction of the parietal sutures. At this stage of the operation the patient's pulse became very rapid and feeble, and, assisted by the gentlemen already named, I placed her in bed, injected brandy beneath the skin in several places, and surrounded her with bottles of hot water. Through the lower angle of the wound I then passed a Keith's glass drainage-tube, and tied the stitches closing the incision. The surface of the abdomen being thoroughly cleansed and dried, the wound was dressed with antiseptic gauze, and a bandage applied. The drainage-tube was secured in place in the usual way, and its external opening protected with sponge and rubber sheeting. The entire operation occupied fifty-eight minutes.

The patient occupied a room to which she had been removed from her home in the country, and which had been carefully cleansed, dried and prepared for the purpose. The bed, mattrass and clothing were new, and everything used was scrupulously clean. I will not describe the details of preparation of sponges, instruments and dressings, as it would be a mere repetition of previous reports made by me to this Society. I will only say that I continue to use a solution of carbolic acid, strength of 1 to 40, for the instruments and sponges, and for sutures and ligatures the best silk; and that I spare no pains in my endeavor to secure perfect cleanliness of operator, assistants, and everything coming in contact with the patient. I believe that the faithful application of the *principles* of the Listerian system is the only sure method of attaining good results after laparotomy. As to whether asepsis is attained by carbolic acid, corrosive sublimate, iodoform, hot water, or other agents, is unimportant; the principles of Listerism are essential, though the manner of their application may vary with the fancy of various operators.

The attending physician in this case was Dr. E. S. Moss, of Williamsburgh, an accomplished young practitioner, formerly an *interne* in the Louisville City Hospital. He assumed the management of the case the second day after the operation, and conducted the after-treatment. We were in daily communication by letter and telegraph. From his notes kindly sent me, I condense the following history of the progress of the case after the operation:

The shock of the operation was severe, and reaction came about rather slowly. During the first three days all went smoothly, the temperature and pulse ranging about 100. The catheter was required to relieve the bladder. On the third day, the discharge from the drainage-tube having about ceased, the tube was removed and the edges of the wound brought firmly together. On this day, also, there being some distension, an enema of warm water was administered, which brought away fæces and gas.

On the fifth day the pulse was over 120, and the temperature reached 104° F., with general symptoms corresponding. Being apprised of the situation, I telegraphed Dr. Moss to open the wound, wash out the peritoneal cavity, and retain the drainage-tube in place, which was promptly done. I also suggested the administration of a brisk cathartic, and Dr. Moss gave a dose of calomel and jalap, which acted freely and promptly. Our efforts were rewarded by the temperature falling below 100° F., with corresponding improvement in all the symptoms. The patient continued to progress satisfactorily for a number of days, and the tube was again removed.

On December 10, the twenty-second day after the operation, the temperature again ascended, reaching 104° F., with rapid pulse and very alarming symptoms. Dr. Moss again opened the lower angle of the wound, introduced a rubber drainage-tube, and washed out the peritoneal cavity. The improvement was prompt, but the discharge persisted until December 19, when, having altogether ceased, the tube was removed and the wound allowed to close. On December 26 the patient sat up, and she improved rapidly from that time on. The following letter from Dr. Moss, dated February 1, 1887, announces her prompt recovery:

Dear Doctor:—Enclosed I send you notes of Mrs. W.'s case from the day you left, and hope you will place them in such form as you think best. I ceased to visit her regularly on January 9, as she was then going about the house. She has completely recovered and has returned to her home, six miles in the country. Her husband informs me that she has reached her usual standard of strength and flesh, and is daily attending to her household duties. Very respectfully, E. S. Moss.

MY FIRST INTUBATION OF THE LARYNX; RECOVERY.

Read before the Denver Medical Association, February 8, 1887.

BY CHARLES DENISON, M.D.,

OF DENVER, COL.

For several months I have been on the outlook for an opportunity to use my set of O'Dwyer's intubation tubes. The first opportunity, that of diphtheritic laryngitis at the Orphans' Home, was lost through the negligence to call me in time. The little patient's heart was ceasing to beat as I reached the Orphans' Home.

On February 1, at 11 A.M., I was called in haste to see a 6 year old boy at 1016 Thirteenth St., the adopted son of J. H. T. He was a rosy-cheeked fellow, apparently in the best of health except for the dyspnœa, etc., which characterized his condition at that time. His respirations were labored, decidedly *croupy*, his face suffused, and there was aphonia. His temperature, in the groin, was normal, pulse 120, and respirations 35 per minute. On examining the throat a patch of false membrane was detected to the right of the epiglottis and just below the tonsil. Here was a case of true croup, or pseudo membranous laryngitis, that dreaded condition which, if your experience has tallied with my own, you have almost always seen end in suffocation and death.

As to the cause of this attack, it should be re-

marked that two weeks previously the boy had broken out with measles, which had run its course so easily that no physician had been called. As to a causative effect, due to this fever, it is interesting to note that of eighty-seven cases of diphtheritic laryngitis reported in the autopsy records of the New York Foundling Asylum twenty-two, or one fourth of the number, had followed immediately after measles.

For treatment this child already, during the previous night, had had syr. of ipecac and some relaxing cough mixture, like hives syrup, which had produced emesis, and thus relieved several hard attacks of dyspnœa. I prescribed wine of ipecac, a teaspoonful every ten minutes during the bad spells, the throat and chest to be rubbed with a relaxing embrocation, and covered with a poultice, which was held in place with a snugly fitting cotton jacket. I also ordered the following:

℞ Sodii benzoati..... ℥ss.
Acidi carbolici cryst..... ..... gr. v.
Listerine.....
Glycerin.....
Aquæ..... āā ℥i.
M.

Sig. Use on swab every four hours and give half a teaspoonful between times.

The attendants were informed of my movements, so that I could be found in case urgent symptoms should supervene.

At 2 P.M. the treatment seemed to have done very well. The child had vomited once or twice, the dyspnœa was not so distressing, though the respirations were 38 to 40 a minute. The use of the swab had wholly removed the false membrane from above the larynx, a fact which made me hopeful the remainder might be dislodged.

At 4 P.M. the dyspnœa was increasing; respiration 44, pulse 120 or over, and temperature normal.

After 7 P.M. I remained with the patient, expecting to have to operate at any time. Some temporary relief was afforded by the inhalation of steam from slacking lime, but the symptoms from hour to hour were getting worse.

By 10 P.M. I was impressed with the danger of longer delay. Temperature rising, pulse 130 to 140, and respirations 50 per minute. Respirations superficial, labored, and accompanied with retraction of the abdomen; lips turning purple and face suffused, and with skin of that fatal leaden hue. The eyelids would remain partly open as the child temporarily slept. Expectoration and cough had ceased for some time, and the breathing was loud and whistling. I am convinced that there would have been no further expectoration to relieve the then present suffocation. It was very soon after 10 o'clock when I had the boy held in the sitting posture on the knees of A. M. Mortimore, and while the head was steadied by Miss Launey, one of our medical students, I introduced the gag (which comes with the tube to hold the jaws apart) and, having already prepared the proper-sized tube for a 6 year old child, quickly, and as gently as possible, considering the struggling of the patient, introduced it so that the head of the tube was down in place below the rim of the epiglottis. This introduction was accomplished with the right hand, while the epiglottis was hooked up by the index finger of the left, according to the usual directions, and was successful at the first attempt, though I had not the advantage, as is recommended, of a previous trial on the cadaver or a healthy person.

I believe the plastic exudation was sufficiently detached in the introduction to occlude the lower end of the tube, for the tube was at once thrown out, together with about half a teaspoonful of false membrane and tenacious fibrin; one portion of the expelled membrane being as large as a silver five cent piece. The relief, however, was instantaneous and remarkable. The boy began to breathe freely at once; his eye brightened; the leaden color left his face to be displaced by the natural hue, and within ten minutes he drank two cups of milk, when for six or eight hours before he had taken only a swallow of liquid at a time.

I expected that the membrane would re-form, and that I would be called within three to five hours, as others have reported they had been, to reintroduce the tube. But in this expectation I was happily disappointed, for I not only enjoyed a good night's rest myself, but so did my little patient. I found him bright and smiling in the morning; respiration somewhat croupy, cough loose, aphonia continued, pulse 92, respirations 34, and temperature 99.5° F. The previous day's plan of medication was in the main continued.

About 3 P.M. I was summoned in haste, but a severe attack of dyspnœa had been relieved, when I arrived, by expectoration. Pulse then 112, respiration 36, and temperature 101.5°. After that there was continued improvement, and to-day the boy is hearty and well, except for a partial aphonia which is slowly disappearing.

Of course, taking this single case as the basis of my conclusion, and notwithstanding the unusual though favorable termination of the first attempt, I feel like ascribing to Dr. Joseph O'Dwyer, the inventor of these tubes, praise equal to that given to any of the many illustrious men who have contributed new means of saving life during the past fifty years.

Dr. W. P. Northrup, before the New York Academy of Medicine, lately summed up the advantages and disadvantages due to intubation as follows:

"It relieves dyspnœa due to laryngeal stenosis.

"There is no objection on the part of the parents and friends.

"The operation is comparatively simple, and free from danger and free from shock.

"No anæsthetic is needed, and no trained assistants.

"No fresh wound is added. The subsequent care of the case requires no trained attendant. The inspired air enters the lungs moist and warm.

"It does not preclude tracheotomy, and may be found useful as a guide upon which to cut.

"Intubation has one conspicuous fault, attested by all: it embarrasses and sometimes interferes with the swallowing of fluids."

How much the previous treatment, the steam inhalations, etc., had softened the membrane and thus prepared the way for its expulsion, we cannot, of

course, state positively. I am inclined to give this treatment some credit in this regard.

As to the choice between intubation and tracheotomy I am inclined to join the adherents of the former, though I was equally successful in my first case of tracheotomy, and that was on a 6 months old baby for œdema glottidis, performed in haste, at night, with only a piece of a flexible catheter for a tube, which after a little had to be discarded. Then I had to cut another ring of the trachea, and the child made a good recovery.

ANTISEPTIC TAMPONNEMENT OF THE VAGINA IN PELVIC INFLAMMATIONS.

Remarks made before the Chicago Gynæcological Society, January 21, 1887,

BY JAMES H. ETHERIDGE, M.D.,

GYNECOLOGIST TO THE CENTRAL FREE DISPENSARY, AND THE PRESBYTERIAN HOSPITAL, CHICAGO.

What I have to present refers to tamponnement of the vagina and supporting the uterus in cases of pelvic trouble, notably of inflammation and enlargement of the uterus, and as the work has grown upon me, other complications in the way of pelvic trouble have also been treated with a result that has rather surprised me. For it, I claim nothing original.

A year ago last fall I commenced the treatment of a case of general metritis and prolapsus of both ovaries with enlargement, which had brought the woman to a very low state. She had had all sorts of operations performed and advised,—repair of the neck of the perineum for laceration,—and had been recommended to have the ovaries removed. Upon examination I found the uterus immovable. I placed the woman in the genu-pectoral position and tamponned the vagina with absorbent cotton, saturated with boro-glycerine. The vagina was douched before the tampon was reapplied, and of course everything was removed during menstruation. This was kept up for three months and she began to have less neuralgia, which had made her life miserable. I kept up the treatment three or four months longer, when there was complete mobility of the uterus, and she went out of doors and to church. The neuralgia subsided, the tenderness of the uterus and the ovaries entirely disappeared, and her condition was so much improved that it seemed to me that this was an efficient means of treating pelvic trouble.

In the midst of this work I found that Dr. Engelmann, of St. Louis, was utilizing the same idea. He was using medicated applications, such as iodine, carbolic acid, sulphate of zinc, tannin, iodoform, etc., and he made this subject the text of annual address to the Gynæcological Society of St. Louis. I think the gist of his paper was incorporated in the report I made to the State Medical Society last summer at Bloomington. Since then, in all sorts of cases of uterine inflammation, I have been making applications of the cotton tampon, resulting in considerable dissatisfaction with the material employed, and I have commenced the use of something else. It is a preparation of wool that is called "antiseptic wool." This wool is finely carded, free from all oil and foreign substances. A piece is cut off, of such a length as will fit nicely into the vagina, and then with the patient in the genu-pectoral position, with the perineum retracted, this is stuffed into the vagina and left there. The upper end of this tampon can be soaked in any antiseptic solution, as boro-glyceride or listerine, and with a piece of string attached to the lower end of it, the patient can remove it and douche the vagina, in readiness for the next tampon, and in this way tampon after tampon can be introduced and the uterus held up to the highest possible level, and advantage taken of the natural drainage from the uterus of the superabundant amount of blood.

The inflammations of the uterus we are usually called upon to treat are not active, but chronic, and if we hold the uterus up so that it can drain itself properly through the veins, the nutritive changes which take place will be facilitated to the greatest extent. A small Sims' speculum can easily be applied without trouble to the patient, and this wool can be pushed into the vagina so that when the pa- gets up she has a soft elastic cushion for the uterus to rest upon. In this way the greatest comfort is at once experienced. I have treated between twenty and thirty cases in this way. One case was a woman with a severe laceration of the neck of the uterus; the probe went into the cavity about 4½ inches. Local treatment had been freely employed in this case. She had pain in the legs and hips and profuse menstruation, and was a total wreck when I saw her. I put her in position and applied the tampon. I found after using four or five of them the pains had nearly all disappeared. I found also that the raw edges of the torn cervix were taking on a new mucous membrane, and I had the gratification of finding, after six months, that this uterus had been reduced to its natural size. It was with difficulty the laceration could be recognized through the speculum.

I have recently been called to see a woman who has inflammation of the ovary upon the right side. I found her in bed, where she had been five months continuously. Upon moving the uterus, I found there was a great deal of tenderness throughout the pelvic tissues and around the right ovary, the slightest touch producing the greatest suffering. The woman was put in the genu-pectoral position and the vagina plugged with this wool. She got out of bed the next day, and the next night went down to dinner. Now she is going all over Chicago. Before that she had been treated nine months by means of local applications, tonics, laxatives, and everything of that kind.

The result of the support of the uterus and holding the ovary up has been almost marvelous. I make these statements concerning this method of treatment for the purpose of calling attention to it, as I am still studying the subject. These tampons are removed after four or five days without the slightest odor upon them.

When the uterus is enlarged it becomes heavy, sinks, and presses the veins which carry the blood out of the uterus, and we have strangulation. By raising the uterus up, the blood flows freely and the

nutritive changes tend always to health. One outgrowth of the use of this tampon may be that many cases of laceration of the cervix, now operated upon, may escape operation. I have been surprised to see how very nicely patients get along, even though they have extensive lacerations, under this treatment.

HOSPITAL REPORTS.

MERCY HOSPITAL, CHICAGO.

CASE OF BONE GRAFTING IN THE LOWER JAW.

SERVICE OF JOHN S. MARSHALL, M.D.,
DENTAL AND ORAL SURGEON.

(REPORTED BY A. C. BROELL, M.D., INTERNE.)

Miss S., aged 42 years, presented herself for operation on January 26, at the Mercy Hospital. Her previous history is about as follows: Nine years ago she was suffering with a disease of the lower jaw, which was diagnosticated osteo sarcoma, by a homœopathic physician, who afterwards performed an exsection for the removal of the disease. The piece exsected extended from the first bicuspid tooth backwards to, and included one-half an inch of, the ramus. This physician also made an attempt to bring the fragments of the jaw into apposition, so that bony union might occur; no such union, however, resulted, but the jaw was so displaced that the median line of the chin was situated about one-half an inch to the right of the median line of the face.

Later on the patient began to suffer with neuralgic pains about the left temporo-maxillary articulation, and in the right arm. To relieve this pain, which was thought to be dependent upon displacement of the jaw, an operation was performed by Dr. Marshall some time ago, by means of which the cicatricial tissue was removed through the mouth, and reposition of the jaw was accomplished. The fragments were held in position by a gold rod screwed into the ramus, and attached to a gold cap applied to the first bicuspid tooth, and retained by oxyphosphate cement.

The patient this day (January 26) presented herself for the second operation, by means of which the gap now existing between the fragments, one inch and a half in extent, it was hoped, might be replaced with new tissue reproduced by bone-grafts. Having been previously prepared for operation, she was at once etherized. An incision was made about four inches in length in the line of the old scar, down to the mucous membrane lining the oral cavity. Both ends of the fragments were laid bare, and well scraped. The hæmorrhage which followed, though slight, was persistent, but was finally checked with a hot solution of bichloride of mercury (1:1000 of water.)

At the same time, having etherized a half grown rabbit, both its femurs were laid bare, and with bone cutting forceps twelve small pieces of bone, ranging in size from about two to six lines in length, two to three lines in width, and one line in thickness, having the periosteum attached, were removed from the epiphyseal extremities. These pieces were placed in a solution of the bichloride of mercury (1:1000), which was kept at a temperature of 99° to 100° F., where they remained from five to ten minutes. After all oozing had stopped these pieces were transferred from the solution to the wound, being placed in two rows in such a way that the inner row had the periosteum towards the mucous membrane and the outer one had it towards the cutaneous surface, the ends of the rows being in contact with the denuded ends of the jaw-bone, and the cancellated structure of the pieces being in contact.

The incision was now closed with eight sutures of carbolized silk, with a few twisted strands of silk left in the lower end of the wound for drainage. The wound was dressed with iodoform and antiseptic gauze covered with oiled paper, the whole dressing being held in place by a bandage. Throughout the operation antiseptic precautions were scrupulously carried out.

The patient left the hospital on the following day. At home she improved rapidly, the wound healing by first intention throughout four-fifths of its extent; in the other fifth, near the drainage, the stitches cut through, retarding the healing somewhat. The remaining stitches and the silk left for drainage were removed on the sixth day. The entire wound healed without the formation of pus.

As far as can be ascertained at present, there are fair prospects that the operation will prove successful.

MEDICAL PROGRESS.

INDICATIONS FOR THE USE OF NITRO-GLYCERINE. —DR. TRUSSEWITSCH, in an instructive paper on the use of nitro-glycerine published in the *St. Petersburger Medicinische Wochenschrift*, points out that the value of this drug in various affections—angina pectoris, migraine, and neuralgia (which he describes as angioneuroses), as also in sea sickness, some forms of anæmia, faintness, palpitation, and other diseases—depends upon the existence of an irregular distribution of blood, which condition may be inferred from a certain degree of pallor of the skin, especially of the face, often co existent with a weak pulse and a small rigid radial artery, which frequently is situated at some depth. When, on the other hand, headache and neuralgia occur in patients with chronic congestion of the subcutaneous veins of the face, nitro-glycerine is to be avoided; and similarly it is of no use in asthma, when the face is reddened in consequence of emphysema. If, however, a pale face exists with angina pectoris, migraine, giddiness, shock, toothache, or sea-sickness, the best results may be looked for by giving nitro-glycerine. The regulating effect of the drug exercises an influence over the congestion of internal organs similar to that brought about by blood-letting; and in these congestions, whether of lung, brain, or kidney, when they are of a temporary character, the pulse is generally found to be slow and of low tension—a fact which, as the author remarks, is sufficiently well-known in reference to the fever-free periods of acute hyperæmia of the lung and kidney. Dr. Trussewitsch lays down,

as a rule, that the condition of the pulse is the best indication for the employment of nitro-glycerine, and the most trustworthy guide as to the dose with which to commence the treatment. The smaller the radial artery is, the more rapidly it dilates under the action of the drug, and the less the secondary effects proceed; on the other hand, the fuller the pulse with a distended radial artery, the less it is affected; and finally, the softer the artery, with a weak pulse, the greater the secondary, and the less the general, effects. Single-drop doses of the 1 per cent. solution are sufficient in cases of small pulse, but with a full pulse it will be found that the full effects cannot be produced with less than 2-drop doses. When there is a soft artery with a weak pulse, subnormal doses only should be given—a quarter to half a drop. After the trial dose is given, the patient's sensations of pulsation and pain in the head, as well as the distension of the radial artery under the finger of the physician, will be the guides for increasing the dose. The author finds that the best modes of administering nitro-glycerine are the simple dropping of the solution on the tongue, and by means of tablets; much less satisfactory results were obtained when given mixed with water.—*Lancet*, Feb. 19, 1887.

Iodoform Injections in Cold Abscesses.—Within a few years a new method of treatment of cold abscesses has been largely adopted, which is simple, easy of performance, and apparently devoid of risk to the patient. We refer to the use of iodoform injections. It consists simply in the evacuation of the abscess by means of an aspirator, the largest-sized needle being used, and in the subsequent injection of a solution of iodoform in ether. A 4 or 5 per cent. solution is the one more commonly used for abscesses of large or moderate size, but occasionally the strength is increased to 10 per cent. when the abscess is of very small dimensions. The quantity of solution to be injected varies according to the circumstances of the case, though, in view of the danger of exciting toxic symptoms, it is generally recommended that not more than a drachm of iodoform should be used. The ether holding the iodoform in solution finds its way into every pocket and sinuosity of the abscess cavity, and there deposits a film of iodoform. Some little attention is necessary after the injection has been made, as the ether is volatilized by the heat of the body, and may cause an unpleasant degree of distention of the abscess cavity. If this occur it may be necessary to introduce the needle of a hypodermatic syringe in order to give exit to the gas. Ordinarily, however, the patients suffer little inconvenience, and are able to go about as usual after the operation. The experience of those who have employed this mode of treatment has been that one injection is often sufficient to effect a definite cure of the abscess, provided, of course, that it is not directly connected with a centre of disease in a bone or joint which is constantly secreting pus. Sometimes, however, it is necessary to repeat the operation two or more times. The chief inconvenience of this method is the pain which it causes. This is usually pretty severe, and is sometimes so great that the patients prefer to renounce all treatment than to submit to a second trial of the injections. Attempts have been made to find some less irritating substance as a substitute for the ether, but they have not hitherto been very successful.

It is not in the treatment of cold abscesses alone that the iodoform injections have been employed, but they have been used with benefit also in tubercular bone and joint affections. — *Medical Record*, March 12, 1887.

Papayotin in Fissures of the Tongue.—Professor Schwimmer reports excellent results from the use of papayotin in fissures of the tongue, after chromic acid, iodoform and nitrate of silver had failed. The papayotin was administered in the following form:

℞ Papayotin..... 1 to 2 parts.
Distilled water.
Glycerine.....āā 10 "

This solution is to be applied with a camel's-hair brush, from two to six times a day, the tongue having been previously well dried. There is no maceration, as would be supposed, but the mixture stops the pain and seems to cause a renewal of the epithelium. Schwimmer reports twenty-five cases, some of several years' duration; and complete cure was affected in all except one, which was syphilitic, though specific treatment gave us no good result. But in this case papayotin ameliorated the condition of the tongue.—*Wiener med. Wochenschrift.*

Antiseptic Collodion.—The *Journal de Médecine* of December 26 contains an account of a new kind of "collodion," which is antiseptic and promotes cicatrization. It does not cause inflammation, and may be substituted for collodion made from gun cotton, in the treatment of wounds and bruises. Like traumaticine, it is efficacious in relieving neuralgic pains, and acute or chronic rheumatism. The affected parts should be sponged with it every twenty-four hours, and in serious cases every six hours. If strips of linen or silk be soaked in this collodion, an excellent sticking plaster is obtained, which quite equals English court-plaster. The following is the formula: Mastic in globules, 3 grammes; balsam of Peru, 1 gramme; narcotine, 1 gramme. Each ingredient should be ground separately, and 5 grammes of chloroform added thereto.

Treatment of Sciatica.—Dr. Metcalf, of New York, says that no prescription for sciatica has ever equalled in efficacy the following: ℞. Tinct. aconit. rad., tinct. colchic. sem., tinct. belladonna, aā ʒ j. ♏. Sig.: Dose, six drops every six hours. He also uses triturate tablets, each containing three drops of the following: Tincture of aconite root, tincture of seeds of colchicum, tincture of belladonna, tincture of actea racemosa—equal parts by volume. Dose, one every four or eight hours.

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THE PATHOLOGY AND TREATMENT OF TRANSVERSE FRACTURE OF THE PATELLA.

While advance in some quarters has been made of late in the treatment of transverse fractures of the patella, there has been but very little study of the pathology of these fractures, and consequently there is considerable diversity as to treatment; the greater number of surgeons, holding the current views as to the cause of non-osseous union, adhere to the older methods of treatment. In the *Annals of Surgery*, of March, 1887, Dr. William MacEwen, the well-known surgeon of Glasgow, contributes a valuable paper on "The Pathology of Transverse Fractures of the Patella and the Olecranon, showing the chief Cause of Non-osseous Union in these Fractures and how to avoid it," which may be considered as a continuation of or sequel to a paper published by him in the *Lancet*, of November 17, 1883.

In order to study these questions Dr. MacEwen examined ten fresh patellæ from as many different subjects, the ages varying from 2 to more than 60 years. It was found that in young children "the ligamentous structures running in front of the patella were presented by a very thin film, in many places scarcely distinguishable from the cartilage. In advanced life the præ-patellar tendinous structures were attenuated especially over the centre of the patella. In the six instances ranging from 14 to 45 years of age, the aponeurotic structures ran in a distinct band over the front of the patella, continuously from the tendon of the quadriceps to the ligamentum patellæ." The antero-posterior diameter of this layer was from 1 to 3 mm. The bulk of the fibres were longitudinal, and many seemingly continuous from the tendon to the ligament, a few being oblique. The *intra vitam* examination of these structures in recently produced transverse fractures coincided with these anatomical investigations; and in applying these facts it should be remembered that the time at which this fracture is most likely to occur coincides with that in which the aponeurotic structures are most developed in front of the patella.

The three causes which have been assigned for the want of osseous union after transverse fracture of the patella are: 1. A supposed deficiency in the patellar blood supply, causing a low vitality of the part and thereby preventing an outpouring of sufficient ossific deposit to unite the fragments together. 2. The separation of the fragments, by the retraction of the quadriceps extensor carrying the proximal portion of the patella upwards and away from the lower fragment. 3. The distension of the joint by blood and serum, thus preventing approximation of the fragments. As regards the deficient blood-supply, the facts are entirely against such assumption, as shown by injected specimens of the vessels supplying the patella, from which it may be seen that the blood-supply is abundant; by the parenchymatous hæmorrhage from the cancellous tissue in transverse fracture of the bone; and by the fact that osseous union is constantly obtained in longitudinal fractures, and that ossific deposition is so abundant in some diseased states of the bone. Nor is it likely that the pressure of a bandage during treatment could so arrest the flow of blood into the proximal fragment that osseous union would be prevented, since it would also prevent the formation of connective tissue between the fragments, of which we know there is no lack of a firm and substantial growth, (and it would also prevent osseous union in longitudinal fractures, in which such union is the rule). As to the contractions of the quadriceps muscle, these might prevent union were no attempts made to bring the fragments together. But we know that such contractions soon subside, and the muscle remains in a state of comparative rest. The resistance is easily overcome, and with ordinary care could not be a cause of non-union. There is frequently a condition of effusion of blood and serum into the joint, but it is so rapidly absorbed that of itself it is seldom sufficient to prevent osseous union. "A small quantity of blood clot, on the floor and roof of the fractured edges, might even be of service in preventing the wandering into the joint of osteoblasts and in forming a medium in which they might congregate and unite together into osseous plates. The presence of coagulated blood between the fractured

surfaces of bones is constant throughout the body, and is not productive of non-osseous union."

Now what is the usual mechanism of transverse fractures of the patella? In the majority of cases they are due to violent muscular action, to an effort in which the retractile power of the quadriceps jerks the patella upwards, relatively to the femur, beyond the position where it usually lies. While it is held below by the patellar ligament it rests on the apex of its posterior vertical ridge, which is now the point of development of the greatest energy of the two opposing forces. The bone may in this position be regarded as a lever of the first order, and the lever being insufficient to resist the strain it gives way. When the bone snaps and retracts, the fibrous, and aponeurotic tissues over it, which are more elastic than the bone, still holding, bridge the space between the fragments, and they are neither ruptured at the same moment nor at the same level as the bone. If the contractions continue the ligaments are overstretched, lose their resilience, and finally give way, being torn into longitudinal strips, and the now inelastic shreds rupturing at variable distances are forced between the fragments. "The majority of these shreds remain attached to the upper fragment, and their extremities would lie loosely over the fractured surfaces were it not for the fact that, at the moment the transverse fracture ensues, the upper fragment, owing to the manner of insertion of the quadriceps extensor tendon, becomes tilted, so as to present the plane of its fractured surface anteriorly; and as it is drawn upwards, those shreds of præpatellar tissue are firmly pressed over its fractured edge by the flexing of the joint, and the action of the atmospheric pressure forcing the soft tissues inwards to fill up the hiatus." These shreds thus adhere mechanically to the bone, the serrations on the edge of the broken surface of the upper fragment acting as so many pins to which the aponeurotic structures become attached. The floor of the patellar bursa, too, is generally ruptured, and portions of it hang like curtains over the fractured extremities, or are fixed on them, over the aponeurotic tissue. With such tissue between the fragments bony union is of course impossible, and even fibrous union relatively modified.

In the cases of transverse fracture of the patella that have come under MacEwen's care the præpatellar tissues have been found between the fragments, and attached to them, as described; and three other surgeons have reported the same condition. It is then probable that in the majority of cases of such injury this is the true cause of non-osseous union, especially if the injury be caused by muscular violence. Those caused by direct violence, usually more or less stellar fractures, are seldom complicated by aponeurotic rupture, and more likely to be followed by fibrous or bony union without operative interference. Those fractures in which the lower fragment only is multiple from having been divided by contact with some external body met with in the fall subsequent to the production of the transverse fracture from direct violence, should not be included under this group.

Leaving out of consideration those cases in which the fracture is not complicated by aponeurotic rupture, if we admit the foregoing points as to the pathology of transverse fractures of the patella we will be able to choose our own treatment and measure beforehand what must be expected from it. We are justified in concluding that if osseous union be desired the soft tissues should be removed from between the fractured surfaces. Except in a few cases which result from external violence, fibrous union will ensue unless this be done. Some believe fibrous union as satisfactory; but while it looks well and appears satisfactory at first, the subsequent course seems far from good. Firmer union may occur in time, but it can never be predicted. Sometimes it takes place, not between bone and bone, but between the layers of intervening aponeurotic tissue; and when a strain is put upon it the attachments give way. "Osseous union is therefore desirable, and that method of treatment which can secure this end with a regularity which can be depended upon, is what ought to be aimed at." In regard to methods we will only say that MacEwen thinks that if wiring be resorted to the wire should be removed when it has served its purpose—in about six weeks—to prevent the possibility of its subsequently acting as an irritant.

THE TAMPON IN PLACENTA PRÆVIA.

At the meeting of the Obstetrical Society of Philadelphia, on February 3, Dr. H. A. Kelly, in speaking of the treatment of placenta prævia, gave the following advice: "The tampon should also be given up, for unless scientifically applied it is utterly useless; it induces great danger of sepsis, and, with the best applied tampon, in the absence of the necessary counterpressure above in the uterus, in the very cases in which it is used, the dangers of concealed hæmorrhage are imminent. If the bleeding has been great bring on active labor; but don't use the tampon."

Obstetricians who are partial to the use of the tampon in proper cases will be glad to know that

Dr. Parvin defended its use in the following language: That the tampon permits concealed hæmorrhage is an old objection which has gained nothing by time; it is a sort of bug-bear that does not frighten obstetricians who have used the tampon, for where it is properly applied, the membranes being unruptured, bleeding, either internal or external, to any serious amount is impossible. Indeed, if the uterus be properly compressed through the abdominal wall, and the tampon well applied, serious hæmorrhage from placenta prævia, even after the rupture of the membranes, is impossible. That septicæmia is likely to occur in cases in which there has been placenta prævia has been generally recognized for some time; this liability to septicæmia arising, not from the position of the placenta, but from the manipulations, the consequence of such position. Now, in violent cases of hæmorrhage resulting from placenta prævia, is the tampon advisable? The most natural treatment of a hæmorrhage occurring with an undilated os is arrest of the flow by pressure, that is, by the application of the tampon. Such treatment may be available in some cases when no other can be so readily applied.

It is probably about one hundred years since the use of the tampon in placenta prævia was introduced by Wigand, *accouchement forcé* being the general practice at the time; and though we may qualify somewhat his unqualified endorsement of it—that in suitable cases and properly used no death of mother occurred—there is sufficient clinical evidence to sustain an endorsement of the tampon as the proper means to employ in certain cases, and at a certain stage of the hæmorrhage; that is, when the cervix is undilated. After thorough tamponing Pajot and Bailly have left cases, as did Wigand, to nature, without disturbing by art the further progress of the labor. Wigand's tampons "of soft linen, dipped in a thin, oatmeal gruel," with the broad end, which is to be passed first into the vagina, thickly covered with powdered gum arabic and rosin, are certainly not to be recommended now; though we agree with Dr. Parvin that "really it would be much better than the sponges which are by some used to arrest uterine hæmorrhage, a practice that cannot be too severly condemned." The success of Dr. Murphy with Barnes's dilators, which really act as a tampon, is not only a very strong argument in favor of the tampon, but also of a more general adoption of that method.

There has been considerable discussion as to how long the tampon should be allowed to remain. We have seen that Wigand left "the rest of the labor entirely to nature, which alone, sooner or later, by means of unusually rapid and powerful pains, will expel the living, healthy child, at the same time, also, the second small tampon, if such has been found necessary to introduce. The placenta was expelled spontaneously in all cases shortly after the birth of the child" (quoted by Parvin, who states that Madame Lachapelle sometimes left the delivery in women she had tamponed to nature, that Pajot and Weil taught that after tamponing women suffering with hæmorrhage from placenta prævia one ought to abandon the delivery to nature, this method giving the best result for the mothers; and that this plan was practised and advocated for many years by the late Dr. Mears, of Indianapolis). Lusk and Galabin agree that the tampon should be removed in at least four hours; Tarnier, however, would allow it to remain for twelve hours, while Depaul's limit seemed to be twelve or fifteen hours at least, and twenty-five or thirty at most. If the tampon be antiseptic and properly applied it may be deemed doubtful if injurious results will follow a retention of it for twenty-four hours.

As shown by the statistics of Müller, the tampon will excite uterine contractions in the majority of cases; and it has been objected to it that during contractions it may convert open hæmorrhage into a concealed one; but with a properly applied tampon this is practically impossible, if the accoucheur press it back when forced down by a contraction, or else secure it with an elastic bandage which will retract when the contraction-pressure is removed.

Finally, it may be said that obstetricians are agreed that, while the tampon is not a sovereign remedy, it is not to be rejected. It should be applied, says Müller, when the os is rigid and only slightly dilated if there is violent hæmorrhage, as immediate delivery is impossible. We gain time without danger, for though it may not stop the hæmorrhage it lessens it, and prepares the parts for labor.

LAW REGULATING THE BUSINESS OF PHARMACY IN THE STATE OF NEBRASKA.

In another department of this issue of THE JOURNAL will be found a copy of the Law recently enacted by the Legislature of Nebraska. We are informed that the law was originally framed by a committee of, and was approved by, the Nebraska State Pharmaceutical Association last May. The first Section of the law provides that "the Nebraska State Board of Pharmacy" shall consist of the Attorney-General, Secretary of State, Auditor, Treasurer, and Commissioner of Public Lands and Buildings. And as these several State officers are not presumed to know much about the business of practical pharmacists or apoth-

ecaries, the Board is required to select five skilful apothecaries of not less than seven years' experience, who shall assist the Board in conducting the necessary examinations of applicants for licenses, etc. This mode of constituting the "Nebraska State Board of Pharmacy" reminds us of the first law for regulating the practice of medicine in the Colony of New York in 1760, which read as follows: "No person whatsoever shall practice as physician or surgeon, in the City of New York, before he shall have been *examined* in *physic* and *surgery*, and approved of and admitted by one of His Majesty's Council, the Judges of the Supreme Court, the King's Attorney-General, and the Mayor of the City of New York for the time being, or by any three or more of them, taking to their *assistance* for *such examination*, such proper person or persons as they in their discretion shall see fit." Notwithstanding this ancient and honorable precedent, the question will recur to most minds, why not make the five "skilful retail apothecaries of seven years' practical experience" the State Board, instead of simply assistants?

The general provisions of the law appear to be judicious and practical, and if executed with fidelity, will do much to secure for the people of that young and vigorous State the services of educated and skilful apothecaries.

The Medical Register is a new weekly journal of medicine and surgery, published by the Medical Register Company, 1519 Walnut Street, Philadelphia, and edited by John V. Shoemaker, A.M., M.D., and William C. Wile, M.D., both well known to the readers of medical journals in this country. The *Medical Register* contains twenty-four double column pages of reading-matter, and has reached its seventh issue, furnishing abundant proof of enterprise and editorial ability.

Important New Work.—We learn that the first volume of "The American System of Gynecology," recently announced by Messrs. Lea Brothers & Co., of Philadelphia, is well through the press, and will soon be ready for delivery. The contributors to this work embrace a large number of the eminent gynecologists in this country.

Effect of Micturition on Pulse-rate.—Dr. Isaac N. Himes, of Cleveland, writes us, in regard to examination for life insurance, that the pulse rate generally falls after micturition, if the bladder be completely emptied; the pulse often falling from 80 to 76 or 74. He thinks that retention of urine may sometimes raise the temperature above normal.

SOCIETY PROCEEDINGS.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, February 3, 1887.

The President, Thomas M. Drysdale, M.D., in the Chair.

Dr. J. M. Baldy read a paper on

EMMET'S NEW OPERATION FOR PROLAPSE OF THE POSTERIOR VAGINAL WALL, OR SO-CALLED LACERATION OF THE PERINEUM.

(See page 339.)

Dr. M. Price described a plan for the *temporary securing of sutures at the moment of insertion.* The ends being left long, two perforated shot are slipped on; the first one is to be the permanent fastening and is left loose, the second is compressed to secure the suture ends together and to prevent the other from slipping off until the time for final closing, when the first is pushed down and compressed.

Dr. Joseph Price described several ways of securing sutures so as to avoid imbedding the free ends of silver ones and to secure easy extraction. Over the silver wire pass the Aveling coil and shot; this will greatly facilitate its removal. He also made some critical remarks on different methods of operating for perineal restoration. The inside method of Emmet gives the best result. The use of well prepared catgut for the sulci sutures materially facilitates the operation. Set the sutures fresh from the alcohol and drop a shot over before they swell.

Dr. Chas. Meigs Wilson stated that the difficulty of representing Emmet's operation diagramatically is due to the fact that the plane of the posterior wall of the vagina is altered by the traction upon the tenaculum holding the crest of the rectocele. The needle figured upon the blackboard by Dr. Packard was not a Baker-Brown needle, as stated by Dr. Packard, but a modified staphylorrhaphy needle, the needle arm being longer, thinner, and having a greater arc of curvature than the ordinary staphylorrhaphy needle. It was first devised by Dr. E. Wilson, to use in uniting the freshened surfaces in Emmet's operation upon the cervix. The objection to its use in colporraphy operations is that, owing to the shortness of the needle arm, the shoulder of the needle, *i. e.*, the junction of the needle arm with the handle, made such a large opening in the mucous membrane of the vagina that the stitch was liable to tear out, especially if there was much tension before union had taken place.

Dr. Longaker spoke of the advisability of the primary operation. He believes all forceps with long blades and large heels will do damage to the vaginal outlet. He has seen transverse tears of the outlet after natural as well as instrumental labor. It has been remarked that perineal ruptures may exist without causing any symptoms, but this is no reason why tears in general should not be repaired. He believes in performing the primary operation in every case. He likes the Chinese silk for sutures. He

has examined a perineum immediately after labor and found it apparently intact, and a month later found a rectocele and cystocele, indicating a submucous tear.

Dr. Joseph Price, upon request of the President, remarked that he had seen Mr. Tait operate for a complete tear into the rectum, also for partial laceration and rectocele. He operates so rapidly that it is difficult to follow him. He makes two scissors cuts, one on each side of the laceration, splitting the tissues from the centre line laterally and forward. He removes no tissue, but throws one flap inside and the other out, and closes by interrupted buried sutures of silkworm-gut. In the complete rent, he splits the septum laterally, turning one flap into the bowel, the other into the vagina, and closes by interrupted transverse buried sutures, with two or more external sutures.

Dr. H. A. Kelly stated that this operation was not original with Mr. Tait. It had been originally devised by A. R. Simpson, of Edinburgh, and a description, with illustration, is to be found in Hart and Barbour's Manual.

Dr. Baldy, in closing the discussion, stated that the needle used by Dr. Emmet was round, slightly curved at the point, and from three-fourths to one inch in length. He uses it with a needle-holder, and, as a rule, prefers to have it threaded with a silk loop into which the wire sutures are hooked. Dr Baldy has now in his care a patient whose fourchette is perfect, but scar tissue can be felt inside of the perineum, and there is some little prolapse of the posterior wall. When she was delivered, some weeks ago, the need of an operation became apparent, as at that time the anterior wall and bladder prolapsed before the head in a mass as large as a base ball. He does not sympathize with the total condemnation of the forceps; they are needed sometimes, though frequently abused; neither does he approve of the so called support of the perineum either by towel or hand, nor the idea of holding the head back, because these methods deflect the force of the uterine contractions against the posterior vaginal wall and the pelvic floor. He has seen cases which had been operated on by the old method by eminent gynecologists, in which the result was a perfect external perineum, but in which the pelvic floor was as badly off as it had been before the operation. The floor was completely restored by the Emmet method subsequently.

Dr. Jos. Price read an extract from a private letter from Dr. Emmet to himself: "I am very glad that the woman who was operated on has fallen into your hands, so that you may be able to make a report of the exact condition after labor. I have not kept any accurate account, but I think I have heard of some twenty cases who have gone through labor without accident after the operation at the vaginal outlet had been done. On the other hand, I have not heard of a single case where the parts were torn after the operation, which is of more value, for I should be more likely to hear promptly of the failure than of the success."

Dr. Jas. V. Kelly reported a case of

PLACENTA PRÆVIA.

K. W., fifth pregnancy, had a vaginal hæmorrhage December 28, 1886. The bleeding was quite profuse, but ceased spontaneously. On examination, the os admitted with ease the index finger, which came directly in contact with the placenta. The patient was supposed to be nearing the completion of the eighth month of pregnancy. She was enjoined to rest in bed and dilute sulphuric acid was administered. Several days later the hæmorrhage recurred, and again ceased spontaneously. She kept on dribbling a little each day until January 11, 1887, when she had a violent hæmorrhage, and I determined on active interference. Her pulse was 120; she was very pale and had attacks of fainting. The os was dilated to the size of a half dollar, and dilatable. I gave her 15 drops of Squibb's fld. ext. ergot. There was no decided pain, though the patient said she felt some slight bearing down. I brought her to the edge of the bed, with her knees flexed, and found a decided thinning of the placenta toward the right sacro iliac symphysis. It was difficult to rupture the membranes without detaching the placenta, so I made firm pressure over the fundus, which caused the head to descend, and I then ruptured the membranes against the vertex. The waters drained off, the uterus condensed, and the bleeding ceased. I then gave 20 drops more of the ergot, and slight pains were noticed shortly afterwards. I still kept my index and middle fingers in the rent I had made in the membranes and the edge of the placenta, endeavoring to prevent any bleeding by pressing the placenta against the left side of the os. The pains became stronger and the head descended and the bleeding again returned. I endeavored to accelerate the labor by encouraging the woman to bear down and by making strong pressure over the fundus, but as these measures did not produce the desired result as rapidly as I wished, and the head having passed the superior strait, I applied the forceps and delivered. There was no further hæmorrhage, and the placenta was expressed by Créde's method in fifteen minutes. The woman received a vaginal injection of warm vinegar, as well for its antiseptic as for its hæmostatic properties.

The fœtus was of fair size for the eighth month, and was nearly lifeless. Artificial respiration, mouth to mouth, revived it and it lived thirty hours. The mother was in a very exhausted condition, and was given brandy and ammonia for nearly a week. The pulse after delivery was 140. She was also given plenty of milk and broth, and not allowed to raise her head off the pillow for a week. She has since entirely recovered. No tampon was used in this case. Ether was not administered.

Dr. M. Price had recently attended four cases of placenta prævia at full term; one, a very desperate one, had been tamponed. The cervix was dilated to the size of a half-dollar. He was urged by his consultant to introduce his hand, turn and deliver, which was, much to his surprise, accomplished in ten minutes, with child and mother both saved. The four children were all saved, and the mothers also, although one of the latter died from anæmic causes

three months later. He would at once, when called to such a case at full term, or in premature ones if he considered it advisable, dilate, turn and deliver. The method adopted in these four cases is that now adopted by the best authorities. Tamponing at term he considered dangerous and involving a loss of valuable time, hazardous to both mother and child.

Dr. Longaker thought it far better to turn the fœtus by the bipolar method before rupturing the membranes or perforating the placenta. He had lately attended a lady in her first labor at the age of 37 years. She was seized with profuse hæmorrhage while walking in the street. When called he found placenta prævia, the os was open to the size of the index finger, and large clots were in the lower segment of the uterus. He turned the child by the bipolar method, passed two fingers through the placenta, brought one leg through and left the case to nature. The child was lost, as the entire placenta was attached low down, placenta prævia centralis, and retraction of the uterus interfered with uteroplacental circulation. In a second case turning was followed by similar results in a case of placenta prævia centralis. While the two children were lost, both mothers recovered without an unfavorable symptom. In three cases respectively of lateral, marginal and partial placenta prævia, treated by rupture of membranes, and application of forceps in one of them, two children were lost. In one of these cases the fœtal heart sounds were extinct on my arrival, half an hour after a sudden and profuse hæmorrhage. All the mothers did well. The high fœtal mortality shows that we cannot place much value upon the child's life, and in view of the dangers which threaten the mother's life, would it not be best to interfere promptly when called to a case of hæmorrhage from this cause, regardless of the age of the fœtus?

Dr. H. A. Kelly exhibited a

PLACENTA PRÆVIA CENTRALIS OF THE SEVENTH MONTH,

in which he had perforated the placenta to break the amnion and, after turning, delivered, saving the mother, who had suffered from profuse hæmorrhage. He described a case in which turning proved impossible in a placenta prævia lateralis, owing to the fact that the cord was so tightly wrapped around the child's neck that only a small bight was left between the head and placenta, and when the foot was brought out at the vulva the head was felt fixed at the brim as at first. The foot was returned, and a forceps delivery of the head revealed the difficulty, which was corrected, and the mother delivered of a seven months baby, which died immediately. The mother made a perfect recovery. No one rule suits all cases. The first point of importance in event of free hæmorrhage is to rupture the membranes, and this must not be a mere puncture, but as free a separation as possible along the placental margin. The hæmorrhage comes from the separation of the uterine and placental surfaces, and this is only to be prevented by freeing the placenta on one margin, so that as the contraction goes up the placenta may, as far as possible, ascend with it. Turning is only needed in the more urgent cases. Where the pains are strong and the hæmorrhage has been but moderate, let the head engage, and more children will be saved.

(For Dr. Kelly's and Dr. Parvin's remarks on the use of the tampon in placenta prævia see editorial on this subject.)

Dr. Price's cases were at full term. He had not taken premature cases into his account. Deliveries at five, six and seven months, the fœtus not being viable, admit different principles. Emptying the uterus as early as possible is safer for the mother.

Dr. H. A. Kelly called the attention of the Society to an *external direct method of measuring the conjugata vera*, which he had found of extreme value in a large number of non-pregnant and gynecological cases which had come to him complaining of difficulties since a previous confinement.

The short vagina, or cellulitis or cicatricial contractions, often prevent the finger in the vagina from reaching the promontory. In a case he had examined in the morning, the short vagina prevented the vaginal finger reaching the promontory while the outside hand rested upon it, and on pressing deeper felt the vaginal fingers fully 3 centimetres below. This case was measured by the outside hand and determined normal. Another case had a rachitic pelvis, 8½ cm. conjugate. She had borne ten children at term through difficult labors, but without assistance.

The method is simple, avoids a vaginal examination in the virgin, is invaluable in many cases retrospectively and prognostically. The inaccuracy of the external conjugate is well known. This, of course, is of no use in the most important class of cases, the advanced pregnant, but it does often afford invaluable facts in other cases.

The method is to press deeply with the finger tips of the extended hand until the promontory of the sacrum is felt, then, by slipping the fingers up and down over this until the relations are well appreciated, let the fingers rest vertically above the angle, and at the same time mark on the palm with the finger of the other hand the position of the posterior surface of the symphysis, also vertically below. This measurement from the mark thus made to the tip of the finger is the conjugata vera thus directly measured.

Dr. Montgomery, in a paper entitled

TRACHEOTOMY AND INTUBATION IN DIPHTHERIA,

urged the importance of early operation. The symptom which should indicate the necessity for operation was depression of the substernal region during inspiration. This symptom indicates the inefficient entrance of air to fill the lungs, and the diaphragm becomes a fixed point depressing the soft tissues. The longer this condition continues the greater the danger of collapse of portions of lung tissue. The large mortality after tracheotomy and intubation is due to the postponement of operative interference in the majority of cases until these changes have occurred. This assertion is verified by his own experience in tracheotomy. In his first ten cases, in all but one of which the operation was done as a last resort, none recovered. In the next seven cases, in which, excepting two, it was done early, five recovered.

The two fatal cases were not considered hopeful at the time of operation. His eighteenth case died before the trachea was opened. Of the last ten, five recovered. Twenty-eight cases with ten recoveries. He has practised intubation in thirteen cases with six recoveries. All but one of these cases were seen in consultation, and some of them were in a dying condition when intubation was practised. In no case did death occur in less than twenty-four hours, and in all the relief from the dyspnœa was prompt and permanent. The youngest child was 18 months of age and died on the fifth day of convulsions. The youngest child to recover was æt. 2 years. In one case of recovery tracheotomy was performed the day following the intubation. A smaller-sized tube than suited for its age had been used; the dyspnœa recurring and the tube absent from the glottis, it was feared that it had been passed into the trachea. It was found that the tube had been coughed up and swallowed, and passed per anum two days later. Of course, in this case, little can be claimed for intubation. He prefers intubation to tracheotomy, and believes that the former will supplant the necessity of doing the latter. The advantages are: It is free from danger; it requires no cutting nor anæsthetic; the after-treatment does not require skilled attention, as the air is moistened and warmed by the natural passages before entering the trachea; there is therefore no dry mucus accumulating in the tube and not the same danger of secondary inflammatory lesions. As the tube does not fill up the calibre of the trachea, membrane is coughed up around instead of through it, and thus the danger of blocking is avoided.

ST. LOUIS MEDICAL SOCIETY.

Stated Meeting, February 12, 1887.

The President, S. Pollak, M.D., in the Chair.

Frank R. Fry, M.D., Secretary.

Dr. F. W. Wessler read a paper entitled

DIPHTHERIA AND BRONCHIAL CASTS.

In October last I saw a boy, 8 years old, whom I had frequently attended for tonsilitis. In three or four days I discharged him. A few days after (Oct. 25) I was called to see his sister. I found her with a high fever, vomiting, very restless, and her throat red. I suspected diphtheria, and informed the family of the fact. They removed her from the home. I visited her from Monday to Thursday, when all the symptoms seemed to have disappeared. At the time what I intended to have been my last visit, as I had my hand on the door to go, I heard the little girl cough. The mother said she had not been coughing that way. It was a croupy cough. I promised to call again the next morning, but before that time they called for me. I found the patient almost choking. I had previously administered calomel and bicarbonate of soda, and afterwards the bichloride of mercury and tincture of iron. I now concluded that I would rely on calomel, and ordered it. I called the next morning and found the exudation had been discharged (a cast of the trachea and bronchi).

We see few specimens of bronchial casts, most of our patients die before this exudation is thrown off. Eight years ago I had a case of the kind in a man 39 years of age. He was a miner from the northern part of the State. He had had measles six months prior to the time I saw him. While at the hospital he threw off the exudation, with the bifurcation of the bronchi well marked. I put it in a solution of chloral hydrate, which did not preserve it well. About the same time Dr. W. E. Glasgow presented a case. Dr. Johnson reported a case in the *Medical Review*, January 29, 1887. He calls it pseudo-membranous bronchitis. Dr. Glasgow calls it plastic bronchitis. It has been called croupous pneumonia, etc. Dr. Moore had asked whether any physician had abandoned the local treatment of diphtheria. I have. When I began the practice of medicine every physician carried a caustic-holder in his pocket, and every case of tonsillitis and sore throat was cauterized. I found that children who were not cauterized recovered equally as well or better than those who had been. That was my reason for abandoning the local treatment, and I never use anything more than a simple gargle. I have much faith in whiskey and have advocated its use for many years. I think it a disinfectant as well as a stimulant. I think more of calomel and whiskey than any other two remedies for diphtheria.

Dr. G. Hurt said that whether or not local applications are indicated depends on the cause of the disease, and the manner in which it invades the system. I believe that if there is any disease that may be referred to the bacillus as its cause, diphtheria is that disease. It must be an animal or vegetable growth foreign to the tissues themselves. If it is a parasitic disease, we ought to have a remedy that would be effectual locally. Whether nitrate of silver is a proper application or not is a question. Possibly calomel exercises its effect as it is administered and not afterwards. If, six years ago, I had openly and knowingly treated a case with calomel and lost it I would have been prosecuted for malpractice. Yet twenty-five or thirty years ago diphtheria was treated with calomel and bleeding, and according to Jacobi, with a mortality of 90 per cent. According to the same authority, without this treatment the recovery has been 90 per cent. I have not returned to the calomel treatment. In the few cases I have had during the present epidemic, I have used tonics and iron and hydrochloric acid. I have also used gargles, from which I think I have derived benefit.

Dr. Hendricks said: As to whether diphtheria is primarily local or constitutional I cannot say. Generally the constitution is evidently affected by the time I see the cases. I address my treatment to the constitution regardless of the local appearance. I started out against local treatment fourteen years ago. I abandoned it because the efforts to make applications exhaust the child. The false membrane that is in sight will do no harm, will not stop the breathing. I have had no cause to regret my course. Up to 1870 I used quinine and iron. I do not use

them now. They disturb the digestive functions. I now rely on a prescription that I found in the London *Lancet* a number of years ago:

R.	Tr. ferri chlor.	fl. ℥	iv
	Liq. ammon. acetat.	fl. ℥	ii
	Potass. chlor.	℥	i
	Aquæ, add.	℥	viii ɱ

Sig.—One teaspoonful every hour.

Dr. H. H. Mudd: The experience of the profession in the past few years tends towards the belief that it is impossible to separate croup and diphtheria. I noticed a short time ago reports of eighty-seven cases of diphtheria in which tracheotomy had been performed, where it was laryngeal and invisible from the beginning in fifty-six cases. I believe you cannot always separate the cases of membranous croup from those of diphtheria. The paper properly dwells upon nutrition and stimulation as the important points of treatment. As to the administration of some salt of mercury and the benzoate of soda, I believe from observations during the past six months where many have been using these remedies, that there is benefit in this treatment. I see the cases only when surgical treatment is needed, and the results of tracheotomies have been better than ever before. Dr. Hodgen was the first man I ever saw make a tracheotomy. He was one of the earliest and staunchest advocates of the measure. During the first ten years that he did the operation, it was with the reluctant consent of friends and against the sentiment of many physicians, and when there was almost no hope of recovery. He had fourteen cases before he was rewarded with a single recovery. He had operated ninety-two times when he died, with fourteen recoveries. I have had seventy-four operations for diphtheria, with twenty-eight recoveries. From all cases, without making a distinction between croup and diphtheria, the work of our office, viz., Dr. John T. Hodgen and myself, together with Dr. Harvey Mudd and Dr. Harry Hodgen, there is a total of 172 cases with forty-four recoveries, a per cent. of 25⅝. Since June I have had twenty-five cases and twelve recoveries. There was no difference in the class of cases.

We should always give patients the benefit of this operation before it is too late, before the residual air becomes so much that the tidal wave is almost nothing.

I have been interested in the accounts of intubation. I obtained the instruments for it, not that I had any great faith in it, but I knew I should meet many cases where the relatives would not let me make a tracheotomy. I say to the parents in these cases, that I believe tracheotomy to be the best operation. I have tried intubations in six cases. In three of these I resorted to tracheotomy afterwards. In one case the trachea filled with a large, hard cast that extended down to the second and third bifurcations of the bronchi, and came near suffocating the child. I removed the tube and performed tracheotomy. In another case in which I resorted to trache otomy, I at first used a tube of the required size; this was coughed up within twenty-four hours. I used a larger tube and it was coughed up. This was repeated four times, until the child was in a desperate condition. The case made a good recovery after tracheotomy. In the third case the child wore the tube four days, during which time he could not swallow without violent coughing; he was very weak, although he had been well fed *per rectum*. A profuse discharge from the trachea, and râles in the trachea and large bronchi induced me to remove it. The breathing was comparatively easy. But at the end of sixteen hours they sent for another surgeon, who thought there was nothing to be done. I thought so too, except to make the tracheotomy. This was done, and the child is getting well. In the other three cases the patients died. I do not believe that the intubation tube answers the indications as well as the tracheal tube. Its usefulness is in cases where tracheotomy may not be performed.

Dr. I. N. Love: I concur with those who deprecate caustics when they interfere with the proper tranquility of the patient. At the Copenhagen International Medical Congress some one reported 100 cases of diphtheria treated successfully by simple cauterization of the throat—of the membrane. Such a report necessarily makes us feel that he is too general in his interpretation of symptoms. Either his ideas of diphtheria do not obtain here, or the diphtheria which obtains in his latitude is not the kind which prevails here. I think there are measures for rendering the local conditions more innocuous. Turpentine, which has been mentioned, is a good remedy. I concur with those who disclaim against quinine. It impairs digestion. The strongest points that I tried to make in my paper were in the direction of treating diphtheria with the bichloride of mercury and benzoate of soda, antiseptic and eliminative agents, coupled with stimulative agents.

Dr. H. C. Dalton presented

A SPECIMEN OF ENLARGED KIDNEY,

taken from a patient, the notes of whose case are as follows:

Frank Schultz, æt. 19, single, peddler. About three weeks ago patient began to grow weak, four days later had hæmaturia, and coughed up blood at same time. The latter has continued at intervals up to present time. Bowels constipated. After entrance to hospital, respirations were slow and quiet; blood flowed from mouth frequently, origin not known. Hæmic murmurs were heard over pulmonary artery, aortic orifice, and at apex of heart. Few sibilant râles in lung. Abdomen tender. Patient had been on a prolonged spree up to three weeks ago. On autopsy, marked congestion of all the abdominal and thoracic viscera was found. The kidneys were enlarged as you see in this specimen. His death could only be accounted for by the general congestion of the above mentioned organs, following the prolonged spree.

Dr. T. F. Prewitt presented a patient who suffered almost continuously, with

HEPATIC COLIC,

from August, 1885, to November, 1886. During this time he was occasionally jaundiced; the attacks became gradually more severe until he was totally un-

able to work; lost flesh, and, except when he was under the influence of opiates, his sufferings were intense. On the 9th of November, 1886, I performed cholycystotomy. Cutting down on the gall-bladder, I aspirate it first to get rid of the bulk of fluid. It leaked from the puncture of the needle. It occurred to me that it is not prudent to aspirate the gall-bladder; it has been followed by fatal results. I have done it several times to relieve distension. In this case the bladder was not much enlarged, the obstruction not being very complete. After drawing off as much of the fluid as I could, I found that the bladder was so short that I could not bring it readily to the abdominal walls, and it became a lively contest to prevent the bile from getting into the abdominal cavity. This was prevented, however, with sponges in the hands of assistants. I found difficulty in getting it to the abdominal walls to secure it. One of the deep sutures suppurated and left a fistulous opening. All the bile does escape from the fistula as is evident from the color of the evacuations. His health has improved amazingly; he has a good color, and were it not for the purulent discharge, his condition would be very comfortable.

In reply to a question by Dr. Le Grand Atwood as to the condition of the ductus comminus choledochus, Dr. Prewitt said: I examined it as well as I could, but detected no thickening or narrowing. I think there was a gall stone in it, which escaped somewhere. I had a case last summer, of enormous distention of the gall-bladder; it reached down to the umbilicus. I aspirated twice: first drew off a quart, and afterwards a pint of fluid, subsequent to which the patient passed several large gall stones. She was much relieved; if she had not been I should have performed cholycystotomy. I had still another case in an old lady where there was considerable enlargement of the gall-bladder and much suffering, though not to the same extent as in these. She also had heart disease. This case was the result of chronic obstruction, possibly of the cystic duct. In these chronic cases, the contents are generally of a mucoid nature, and not bile.

Dr. R. J. Hill said: I have seen a few cases of obstruction to the passage of the bile, where there was no icterus; none marked at least. In one case the colic was so severe that the patient would throw himself across a barrel for relief. I had read a report of a case by Dr. Matthews, in which he had used sweet oil with good effect. According to his instructions I produced free catharsis and then administered a teacupful of olive oil. On the following morning the patient reported the passage of twenty-four gall stones, with great relief to his sufferings. The dose was repeated and at the end of three days, he had passed over 125 stones of that character. Relief was complete. It is now three years since he has had any trouble. I do not understand the modus operandi of the oil.

LOCAL TREATMENT IN DIPHTHERIA.

Dr. F. J. Lutz said, that at the last meeting Dr. Moore's question as to the advisability of using local treatment in diphtheria was not much dwelt upon. When we are called, in the majority of cases, we find the fauces, uvula, etc. covered with membrane In many cases, from the nostrils of the child there is exuding a fœtid, secretion, so that by the sense of smell we can make a diagnosis. I do not understand how any one can fail to have his attention called to the necessity of local applications, for cleanliness, if for nothing else. If the ulceration instead of being in the throat, were in the anus or vagina, or on the extremities, certainly nobody would undertake to cure it by internal application of medicine as iron or a febrifuge or calomel. I have been in the habit of applying the bichloride of mercury by means of a spray to the throat. Of course some exhaustion is produced by the child's struggles for the first few times, but it soon finds it far from disagreeable. You remove much of the secretions; a part of the membrane sometimes. Often a decided improvement in respiration follows. It is a valuable factor in reducing the temperature, much material is removed which would otherwise be absorbed. I think that by this means, the disease is checked—it does'nt extend down as far. I find that where the child is too small to make local applications, the results are not so good. I abhor the use of the probang; it is an outrageous proceedure. I have been in the habit of giving calomel and bicarbonate of soda; because authorities say it is valuable, also on the theory of its germicidal properties. I believe I have been more successful since I adopted this plan of treatment. I believe tracheotomy should be done so soon the patient's blood is not well oxygenated, his breathing embarrassed, and discoloration of the lips shows. I believe that many tracheotomies would be improved if we could keep the throat properly cleansed.

Dr. William Johnston said: The recent epidemic has made the treatment of diphtheria especially interesting to this community. I have never observed anything contagious about membranous croup. Diphtheria commences on the fauces, etc., with a peculiar membrane and a peculiar condition of the patient, and peculiar symptoms. There is a distinction between the diseases. Most of the modern specialists agree that diphtheria is the result of invisable organisms acting on the larynx, pharynx, etc. Burdow Sanderson and others believe this, and that we should attack them immediately with the spray. Were this theory correct, that would be good treatment. Those who believe that this membranous croup which kills in a few hours depends on bacteria, should have a spray in their satchels, and begin first thing to spray the throat, as Hunter did, for consumption, a few years ago. My experience with diphtheria is a sad one, spray or no spray; calomel or no calomel. So that when I read Morell McKenzie's report of sixty one recoveries from 100 cases of diphtheria, I sometimes think he has had cases of follicular laryngitis and called them diphtheria.

Dr. Adolph Green said, that there is not only a difference between diphtheria and membranous croup, but there is a difference between diphtheria and diphtheria. Most cases of membranous croup commence in the larynx; they are local, and not general, like diphtheria. If you perform tracheotomy

in diphtheria, it will prove a failure because your diphtheritic process kills your patient. If you have performed tracheotomy and the case gets well, you have saved time to treat the case by that means, and have proved yourself a good physician.

Dr Prewitt said: In a case in which I performed tracheotomy a year ago there was paralysis of the muscles of deglutition. The child came near starving in consequence of its inability to swallow. I resorted to the expedient of taking the tube out and putting a little bit of sponge into the larynx and then feeding the child. In the recent epidemic here, I see that 700 cases of diphtheria, with 135 deaths have been reported. I don't think any physician will believe that all those cases were diphtheria. I have seen many cases of follicular pharyngitis, but comparatively few of diphtheria.

Dr. Johnston said: There was a difference in the membrane in membranous croup and diphtheria. Virchow asserted this many years ago; but it has been denied.

Dr. William Porter said: I believe that the best operation would be that of tracheotomy without tubes. Dr. Prewitt placed a sponge in the larynx; I believe that ought to be done frequently. We know that many cases die from what we call pneumonia, because, I believe foreign bodies and particles from the inflamed mucous membrane get into the lungs. In Dr. Prewitt's case this was prevented —the sponge prevented the milk, etc. from getting into the lung. Intubation, by and by, will lose the favor for which it has been received, for the reason that it is almost impossible to prevent foreign bodies and diseased substances from getting through the tube placed in the larynx, into the lungs. So that after all, the tracheotomy is the grand operation where there is laryngeal obstruction. I endorse the early operation.

Stated Meeting, February 19, 1887.

The President in the Chair.

SCARLET FEVER.

Dr. William Johnston said: I would like to have the views and experience of the gentlemen concerning the scarlet fever beginning to prevail in St. Louis; whether this form is not diphtheritic in its character, also whether scarlet fever has a tendency to go into the croupous or diphtheritic form. I have seen but two cases of scarlet fever this winter; both were of an inflammatory type, characterized by high temperature and bounding pulse. In one case the child had not been exposed to any case of scarlet fever that we could learn. It had been confined to the house for one month, because it had had an attack of chicken-pox. The initiatory symptoms were of a character of stupor for twenty-four hours, at the end of which time the eruption came out all over the child. About the fourth day there commenced a snuffling and discharge of mucus from the nose. About the fifth day the fever began subsiding, and desquamation began.

I prognosticated that the child would recover, but on the morning of the sixth, about 3 o'clock, he commenced with that peculiar croupy cough which you all understand. I saw the child about daylight, when there was difficulty in breathing, a constant hacking cough, and great restlessness. I advised calling another physician. We both agreed that the child could not recover. The temperature came up again and continued high from Sunday morning till Tuesday evening, when he died of strangulation. Antipyrin, small doses (⅛ gr.) of calomel with soda were used. Bowels were moved, bath administered, Fleming's preparation of aconite was given. The difficulty in the trachea was not relieved; tracheotomy was suggested but not performed, and the child died with membranous croup.

Dr. I. N. Love said, that he had been partial to the local treatment; it is important, not only for relieving the discomforts of patients, not only for the soothing effect on the irritated surfaces, not only for the specific effect, but for the purpose of local disinfection, of rendering the membranous deposit innocuous, so far as possible. These local applications, I think, should be made in a manner to disturb the patient as little as possible, because, one of the important points is to husband the patient's strength, in the way of nutrition, of stimulation, and at the same time, arrange your local applications so as to secure as little disturbance as possible. The spray is preferable to gargling; it will reach further and in an easier manner. One point has not been touched upon; that is, the tendency of the deposit to increase by continuity of tissue. It is a point to keep the nasal passages clear, and in order to secure this, I have the nurse or patient use melted vaseline, carbolized (5 grains to the ounce), introduced into the nostril, either with a spoon or small dropper or syringe. Some children will snuffle it up readily. The surfaces are soothed, the accumulated secretions softened and discharged, and the passages kept open.

Regarding Dr. Johnston's disbelief in the curability of the bona fide membranous croup, I think the laryngeal trouble does not necessarily imply any more constitutional involvement, or that the disease is necessarily of a malignant form, but simply that the local deposit is in a very undesirable place, causing mechanical obstruction to breathing. We have all seen cases of membranous croup get well. I have no doubt Dr. Johnston has. I can recall five of them, in which I could not get doctors who also saw them, to say whether they were croup or diphtheria; they did'nt know. And I don't believe anybody knows. I think the health commissioner solved the problem correctly when he ordered that a case of membranous croup should be placarded as diphtheria. In the five cases mentioned they were dying, the operation was performed, suffocation was prevented and they recovered.

Dr. Adolph Green said: It was a fact that all the infectious diseases are sometimes complicated with croup, small pox, measles, etc., but they are all membranous croup. False membrane is not always deposited there. There is merely a catarrhal inflammation. For the most part, these cases of croup have nothing to do with true diphtheria, but some

times it may happen that actually there is primary affection of the pharynx.

Dr. Johnston did not mean by membranous croup, laryngitis, tonsillitis, pharyngitis, etc. He meant true membranous croup, and believes it is not curable by any means which we possess.

Dr. G. Hurt said he had been in the habit of recognizing three kinds of croup: Spasmodic croup, and a croup due to a simple inflammatory condition without membrane. That the membranous croup is most usually diphtheritic, he is willing to concede.

Dr. W. H. Ford said: A year ago a severe case of diphtheria in an adult occurred in the West End. It was attended by Dr. H. Tuholske. There were two other cases, all of which recovered. In the house across the alley from the one in which these cases occurred three other cases occurred in succession, all getting well. I afterward learned that in cleaning up after the first cases the people of that house through some of the materials from the diphtheritic room into the alley; these were afterward carried by a boy from the second house, and he had the first case of diphtheria in that house.

Dr. W. Porter said: I have tried to make a practical summary of the prevailing opinion amongst the profession as follows:

1. That the profession is not studying so much the obscure points in the nature of diphtheria, as it is the practical benefit to be derived from properly treating it.

2. That diphtheria is not an incurable disease. Those who have had the best results favor first limiting the local progress of the disease. It is not fair to say that because the cauterizing the throat has failed to cure cases, therefore local applications to the pharynx made with gentleness and tact, cannot be made so that the child will not resist. Also, those who have reported practical results favor medications that limit the progress of the poison, that render it inert. The use of the benzoate of soda has increased in favor and my experience with it corroborates the good reports concerning it. I am sure I have found good effect from using guardedly, bichloride of mercury.

3. Nutrition and stimulation should be resorted to to keep up vitality.

4. The air passages should be kept as free as possible, and, if necessary, an artificial opening should be made. I don't believe that intubation is likely to afford the great relief that its inventor now maintains. When tracheotomy is performed, the child gets air into the lungs pure and fresh; when intubation is performed, the child continues to breathe through the diseased channel; is liable to receive particles of matter into the lung, to set up pneumonia, from which it dies. Tracheotomy is not such a terrible operation; where it is done in cases not associated with this disease, it is not a dangerous operation. I don't believe in tracheotomy when the membrane has descended into the trachea, or when the child is beyond recovery. But where you find that the lungs are resonant, that there is nothing but mucous râles in the bronchial tubes, where the lower air passages are comparatively free, and the upper ones occluded, we fail in our duty if we do not practice tracheotomy.

Dr. C. H. Hughes said, that our fathers built more wisely than they knew, when, failing to draw the later scientific distinctions between diphtheria and croup, they treated them as the same thing, and used calomel so effectually. Before Bretonneau drew the line of demarcation between them, we heard very little of the fatality of diphtheria; and so far as we can discern from the literature, diphtheria is not a disease which has come of late. Now the same treatment is given since we have returned to the practical practice of our fathers, and suspended the scientific difference between tweedledum and tweedledee. A point which I have not heard discussed, is the absolute necessity in diphtheria, as well as in croup and every other affection which is taxing on the vital powers of the organism, of sustaining the vital centres by adequate and enforced sleep as well as nutrition. If there is anything in which it appears to me that practitioners are derelict in the management of diphtheritic cases, it is in not enforcing in the night adequate sleep, and that by chloral.

Dr. Johnston said, he was one of those who gave calomel freely, but his patients died.

Dr. R. Funkhouser had been accustomed to treating many cases of diseases of the throat, but during the later part of last year, and early part of this year, he had not had a case of diphtheria. He considers that a great many cases reported are not diphtheria.

In reply to a question by Dr. Rumbold, Dr. Funkhouser said: Some cases I have had have been in the neighborhood of cases reported as diphtheria; their parents were much exercised and sent to me, expecting me to pronounce them diphtheria. It may be that some of my cases might have been called diphtheria, but I have not seen a case of diphtheria this year or the last of last year.

Dr. Love said, that this point was touched upon in his paper; it was suggested, that some observers might be more liberal than others in their interpretation of the symptoms. But we do not want to go too far in either direction. The death rate is enough to indicate that diphtheria has been abroad in the city. We all know a classical case of diphtheria, but we may have mild cases, severe types and malignant types. During the time that diphtheria prevails, there is always an epidemic of sore throat. The symptoms of a case of diphtheria may vary to such a degree as to make the diagnosis doubtful.

Dr. Rumbold said: In reference to the diagnosis (and prognosis) of cases, I have noticed that when the membrane is located on the tonsil, or in the anterior portion of the throat, the case was generally a mild one; if a little further back it was increased in gravity; if in the posterior portion of the fauces, then it was a grave case.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, March 7, 1887.

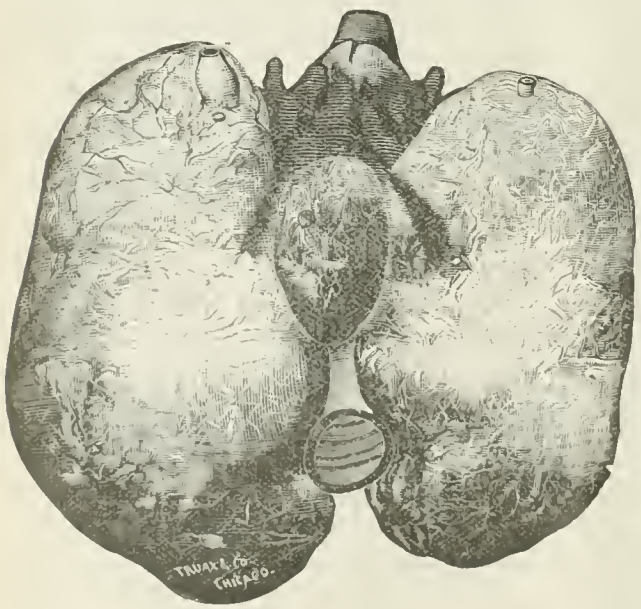
The President, Edmund J. Doering, M.D., in the Chair.

Dr. A. E. Hoadley read a paper on

DEEP TUBING OF THE LARYNX AS A SUBSTITUTE FOR INTUBATION, WITH A REPORT OF NINE CASES.

(See page 337.)

Dr. F. E. Waxham opened the discussion and said: In this connection I take occasion to present a bronchocele which produced death by pressure on the trachea. The history of this case, briefly, is this: The patient was a girl 14 years old; she had been troubled with a goitre for about a year, which increased rapidly in size and the people observed that it was at times larger than at others, more particularly after the child had taken cold; but still the goitre gave no inconvenience until three days before death, when it is stated the child had taken a slight cold and the tumor became larger. With increase in the size of the tumor and the consequent pressure upon the gland by the sterno-thyroid muscles, great dyspnœa resulted. The patient was attended by Dr. J. G. Berry, who recognized the true condition, and on the third day I was called to perform intubation. The child was now in the most desperate condition; indeed, it was moribund, the pulse was feeble, rapid and thready, hypotastic congestion had already occurred in the lungs, and the child was semi-comatose.



While in this condition the largest size intubation tube was introduced into the trachea, but it failed to give relief simply because the tube was not of sufficient length. It would not reach through the stricture, and from the pressure of the gland, as rapidly as it was pressed down in position so rapidly would it be pressed up again. The child was so near dead that tracheotomy was thought to be useless. To meet such emergencies as this I have had a much longer tube constructed, one that will pass entirely through such a stricture and consequently give perfect relief. The object in performing intubation in cases of bronchocele would be to give immediate relief, and to give us time in which we might perhaps reduce the tumor by electrolysis or the internal and external use of iodine; or these measures failing, we could then leisurely enucleate the gland. Bronchocele may produce death by pressure laterally, or by suffocation from pressure upon the trachea anteriorly; or a lobe of the gland may develop between the œsoph-

agus and the trachea and produce pressure posteriorly. In this case the pressure was exerted laterally. Coming more particularly to the discussion of the paper presented to-night, I feel that it should not go without a few words of criticism. As I believe that an old adage is that the proof of the pudding is in the eating of it, and as intubation has been performed nine times without a success by this new procedure, I would feel that there is little to recommend it. First, in regard to the position of the tube; the author recommends that the tube be reversed, and instead of placing it with the beveled surface forward and the shoulder projecting backwards, he recommends the tube turned so that the shoulder will project forward and the beveled surface backwards. A case has been reported to me in which there was complete perforation at the base of the epiglottis from the pressure of the beveled surface of a straight tube. The most perfect tubes are now made with the upper surface curved slightly backwards so that no pressure will be exerted upon the anterior wall. If we turn the tube around and place it with the projecting shoulder forwards, how much greater must be the danger from ulceration. Again, the author refers in his illustration to a tube with a shoulder broad posteriorly, a tube that has been discarded some time since, for it has been found that a tube with an olive-shaped head fits the larynx much better than the old tube. I think the author is mistaken about the head of the tube riding high and riding high and resting upon the arytenoid cartilages. It depends altogether upon the judgment used in the selection of the tube. If a tube is used larger than is appropriate for the age of the patient, it will be found that while the tube can be passed into the trachea without difficulty, yet the head will not sink into the larynx, and then it will ride high and swallowing becomes very difficult indeed; but if the tube has an olive-shaped head and is appropriate to the age, then it will sink into the cavity of the larynx, resting upon the vocal cords, and swallowing is attended with but little difficulty. In regard to the length of the tube, it

would seem to me that little would be gained by making it shorter; indeed, this was one of the reasons of Bouchut's failure thirty years ago. You can readily see if we use a short tube, one simply projecting through the larynx, there would be much greater danger from detachment of false membrane below the tube. In offering these criticisms it is with no unkind intent, or for the purpose of discouraging attempts at improvement. While I have now performed this operation over one hundred times, and with a success rarely attained by tracheotomy, yet I do not consider the instruments fully perfected.

Dr. Christian Fenger said: I shall not say anything about intubation of the larynx according to Dr. Hoadley's method, further than if there is a possibility of avoiding the difficulty in swallowing, then that is a very important point. And if a change in the position and shape of these tubes will help us to avoid that, it will make intubation still much more valuable than it has been heretofore. But I will say a few words in regard to goitre, as Dr. Waxham has shown us this very interesting specimen, and as this is of great importance. As Dr. Waxham says, pressure from the goitre on the trachea causes the so-called sabre sheath trachea with the subsequent stenosis, either from pressure or from softening of the rings from pressure and atrophy. And that is not the only danger in goitre. There are goitres where the trachea is perfectly open, and still a too often fatal dyspnœa occurs. Those are the causes where the recurrent laryngeal nerve is affected by pressure from the tumor so as to cause symptoms of posticus paralysis. Thus we see cases where extirpation of the goitre has been made to relieve respiratory difficulties. We see that thus the respiratory difficulty remains in spite of the removal, sometimes for a time, sometimes forever; the latter when no repair of the nerve is possible. Besides these two classes of danger to goitre patients, there is a third met with, of course only in severe cases. It consists of a spasm of the glottis, severe and continuous enough to terminate in sudden death. How this spasm originates is as yet unknown. The authors having paid most attention to this subject feel inclined to believe that pressure from the goitre on the pneumo-gastric nerve causes irritation of the vagus centre of the brain, and reflex contraction of the muscles of the glottis. These are the cases where goitre patients in apparently good health, with no dyspnœa, or with a slight occasional attack, will die suddenly. For instance, a patient is well and around amusing himself during the day, and in the night a sudden dyspnœa sets in and the patient dies before anything can be done. Intubation with the long tube in a goitre patient shown by Dr. Waxham may be of very great importance as a means of relieving suffocation attacks in goitre.

Dr. Ferdinand Henrotin said: My position is very strongly in favor of that taken by the author of the paper, and as Dr. Waxham says the eating of the pudding tells us about the making, my experience has been directly the opposite to that of Dr. Hoadley. I have only had a few cases, but if they are of any importance in elucidating this point, I take pleasure in giving them. I believe in having the tube facing in the way mentioned in the paper. My first case was about a year ago, the patient being brought to me from out of town. As it was my first case I took particular pains to follow the regular method as pointed out by those who had introduced it, and so introduced the tube with the upper face looking forward and upward, that is, the upper plane at the entrance. The child threw up the tube within ten minutes. I immediately replaced it, and while he remained in the office he was perfectly free in his breathing and entirely relieved from stenosis. In spite of my endeavors to have him remain, he was taken to his home in the country, the tube remaining in place. About eight o'clock the next morning he coughed up the tube. He was all right for an hour, then began to choke up again, and in another hour died from stenosis. In another case I had immediately after, there was no relief. I introduced the tube four different times; I had it in the larynx and it remained in position, but the child was not relieved. I intubed a third child, and it died. These three cases were all with the tube in the way mentioned by Dr. O'Dwyer, and they all died. Following that I had three successful cases, and the tube was introduced the other way, facing in the other direction. In one of the cases I had no particular trouble in taking the tube out, but I had more or less trouble in introducing it, a little more than the other way. These cases all recovered. I had a case that recovered. a child of seventeen months, who retained the tube four days and coughed it up himself. Following that and a little talk I had with Dr. Bartlett on the subject, I again resumed the method of Dr. O'Dwyer, and placed the tube in the other direction, and that child died. Day before yesterday I was called to place a tube, and I introduced it without difficulty. I put the tube in about 9 o'clock in the evening, and yesterday, a little less than twenty-four hours after putting in the tube according to the O'Dwyer method, it was coughed up by the patient. I went back last evening with Dr. Cunningham, and said, "Now I am going to put the tube in the other way, and see if the patient coughs it up." I replaced the same tube, facing the other way, and he has had no difficulty as yet in retaining it. I have had four cases intubed by the O'Dwyer method, with four deaths; three cases with the tube turned the other way, all recoveries. I suppose it is a coincidence, to a great extent. The eighth case has not progressed far enough to state whether the child will recover. In regard to the advantages of this method, so far I have never had a tube coughed up that was put in in that way, except one, on the fourth day, but the child recovered. It seems to me the tube holds much better, it sinks into the larynx and in most cases disappears, you cannot feel it with the finger, while if it is turned the other way you can feel the edge of it with your finger. So far as the extraction of the tube is concerned, except in two instances I had no particular difficulty. As regards swallowing liquids, so far as my observation goes I think it is speaking a little strongly to say that the patients can swallow; I do not think they can swallow much; I feed them on semi-solids; I cut a raw

oyster in pieces and let it slip down; a custard and the white of an egg that slip down easily, and that, with little pieces of ice to quench the thirst, has usually succeeded with me. The disadvantage that I consider attaches to the short tube is that the expulsive effort at coughing would frequently cause it to be coughed up. The length and weight of the tube must be an element in keeping it in place. It seems to me we are using too small tubes. I am using the second size in a child of four years, and getting along quite well. As far as the difficulty of introducing a long tube is concerned, I simply start the tube, and as it slips into the larynx withdraw the obturator, and just as it comes out of the tube my finger slips into its place and pushes the tube home.

Dr. E. Fletcher Ingals said: I have had no practical experience in putting in the tube *the wrong way*, and I do not know how well it may turn out, but anatomically it is certainly wrong unless the shape of the tube be modified. It may be that with the head of the tube modified it would sink into the larynx, as recommended by the author of the paper, but with the tube as constructed by Dr. O'Dwyer it does not seem to me a safe procedure to insert it wrong side foremost, for fear of pressure upon the epiglottis causing ulceration. As to the effects of deglutition, if the tube fitted and would set deep in the larynx and remain there, of course the patient could swallow more readily. It seems to be the experience of the last speaker that these patients do not always swallow readily even when the tube is seated deeply in the larynx, and I am inclined to believe that unless some device can be invented to prevent the entrance of fluid it is better that the patient should take none. Where I have introduced the tube it has been for other physicians, so that I was usually unable to watch the subsequent treatment, but in those that have recovered I have insisted that they should drink absolutely nothing. In the last case I insisted upon this so strongly that I cautioned the parents if they gave the child a teaspoonful of water they would kill it. The child will want to drink very badly after the first twenty-four hours, but it is not a necessity for a few days. If no fluid is allowed the patient is not nearly as likely to have bronchitis or pneumonia as when it is permitted to drink. The child may have ice, it may have enemas, and may have soft solids in abundance. As to the length of the tube, I agree with the last speaker that the long tube is the better. One of Bouchot's mistakes was that he made his tube too short. But the principal reason for his failure was that he attacked tracheotomy; he not only wanted to introduce his tube, but he wanted every one else to stop tracheotomy. I would like to know what success Dr. Waxham has had with the rubber collar in preventing the entrance of fluids into the air passages.

Dr. John W. Niles said: My observation so far leads me to think that it does not make very much difference which way you introduce the tube as regards the patient's ability to swallow fluids. In neither way can this be done without exciting cough. In the two cases in which Dr. Henrotin introduced the tube for me he introduced it the wrong way, and they swallowed fluids better than I expected they would. The next case I had I introduced it myself the wrong way, the same as he did the others. The child had more difficulty in swallowing than the others had; on the third day he coughed the tube up, and when I reintroduced it, it was in the way recommended by Dr. O'Dwyer, and there was a marked improvement in his ability to take liquids. In fact, he swallowed better than the other two. He succumbed to the disease six days after the tube was first introduced.

Dr. F. E. Waxham said: In regard to the rubber attachment which I have recently devised, I certainly think it a great improvement. Some may not desire to use the artificial epiglottis attached to the rubber collar, in which case it can be removed and the tube will still be a great improvement, inasmuch as, the head being small and surrounded by the rubber, it will fit the larynx more perfectly, there will be less irritation, and ulceration will be impossible. I have recently saved two little patients in which this device was used, and have also employed it in other cases with advantage. I agree with Dr. Ingals that it is best to keep water from the little patients as far as possible. I usually advise ice-cream, a very little at a time, or that a small piece of ice be placed in a cloth and held in the mouth. This relieves the urgent thirst without causing the frequent coughing that arises from the endeavor to swallow water.

Dr. Hoadley, in closing the discussion, said: As I mentioned in the paper, I started out in this matter of intubation really on my judgment as to the position the tube was designed to take in the larynx, for I had not given the subject sufficient attention to remember that the tube was designed to rest high in the larynx, and my experience has been so very pleasant, so far as the non-interference with the function of the throat is concerned, that I have decided in my own mind that deep tubing is preferable to intubation. The cases that I have tubed in that manner were all bad cases, and not in a single one could I give a favorable prognosis. They were all promptly relieved, and that was all I expected to attain from the tubing. I have recommended the short tube; the only advantage that the long tube can possibly have over the short one is its weight, except in rare cases, and then its length is of advantage. In the majority of cases of laryngeal stenosis the obstruction is entirely in the larynx, and when it does extend down into the trachea the probabilities are that the child will die of continued extension, and in such a case the long tube can be introduced. In the nine cases I tubed in this manner I used the long tube, so I cannot say whether the short one would have relieved the stenosis. In one autopsy where there was laryngeal diphtheria there was no diphtheritic exudation in the trachea, so that the extension of the tube to the seventh ring was unnecessary. In reference to the position of the tube resting against the epiglottis, as in the O'Dwyer method, I would state that the epiglottis folds down and bears first upon the shoulder of the tube, then closes its orifice, but it cannot perfectly close the larynx. Dr. O'Dwyer has

had ulceration of the epiglottis with perforation. You might think it would be a great deal worse to turn the tube around, that the pressure would be greater upon the epiglottis, but when I turn the tube around it goes half an inch lower, and the projection of the tube that is supposed to touch the epiglottis does not touch anything, and the mucous membrane is not pressed upon at all. Introducing the tube in the O'Dwyer method it will not go into the larynx; you can push it down and still it can be felt above the larynx, so when the epiglottis folds over, it must necessarily come against the tube. By turning the tube around, sinking it well into the larynx, it goes down so far that in a small larynx you cannot touch it with the finger, it goes down as far as the attachment of the apex of the epiglottis with the thyroid cartilage. The epiglottis folds down over the larynx, the laryngeal tube is still free below it, resting on the vocal cord, so that it can produce no ulceration of the epiglottis. As to the vocal cords, Dr. O'Dwyer says that ulceration is rare in that situation. That is because the pressure is slight, and not attended by friction, as in the epiglottis. Northrup says you must press the tube well down into the larynx. In doing this it rests against the epiglottic cartilage and its projection presses back against the arytenoid cartilages, pressing them wide apart in the most disagreeable manner. It is like putting the right foot into the wrong boot. It does not fit or rest easy at any point. Turn the tube around and it rests comfortably in the larynx without one point of pressure, the only pressure induced is that of swallowing, which is not sufficient to produce ulceration. I have never had any trouble in introducing the tube except in one little patient in whom, it seemed to me, the larynx went down to the sternum, and it was with great difficulty that I reached the orifice of the larynx, but when I did finally engage it the tube was introduced readily. To facilitate extraction I have had con structed a cup-shaped depression on the head, instead of the oval convex surface with the hole directly in the summit. With the oval head, unless you strike the aperture itself you are not likely to find it, as the extractor will invariably glide to the outside of the tube. With the cup-shaped head, partly from the tube being surrounded by the larynx, the extraction is greatly facilitated. My patients have all, with the one exception mentioned, been able to drink fluids; they have been able to drink two or three swallows without coughing. Occasionally there was some irritation; they would drink a large swallow and cough, immediately drink again and then cough, but not one refused to drink. I had one case that did recover. Dr. Waxham performed the operation for me, introducing the tube in the O'Dwyer method. That patient wore the tube nearly two weeks, so long that it took between two and three weeks before the child could again talk, but it did not wear it long enough to get used to swallowing without coughing. It could not swallow fluids at all and was fed with the greatest difficulty, a part of the time by the stomach tube. The object of the rubber collar with its valve-like attachment is, as I understand it, to close the orifice of the tube. Inasmuch as the epiglottis will close the tube by its automatic action of folding down over it, I regard the rubber top as being wholly useless. Not only is it useless, but the valve standing up in constant apposition with the epiglottis is a source of additional and continued irritation.

STATE MEDICINE.

LAW REGULATING THE BUSINESS OF PHARMACY IN THE STATE OF NEBRASKA.

SECTION 1. That there shall be established in the State of Nebraska a Board to be styled the Nebraska State Board of Pharmacy. Said Board shall consist of the Attorney-General, Secretary of State, Auditor, Treasurer and Commissioner of Public Lands and Buildings, and said Board shall appoint five examiners, or secretaries, who shall be skilful retail apothecaries of seven years practical experience, actually engaged in said business in the State of Nebraska; and said secretaries shall assist said Board in conducting all examinations herein provided for, and in the performance of any of its duties. Each of said secretaries shall receive a compensation of $5 per day for each day's service actually and necessarily performed, and such necessary expenses as shall be audited and found just and reasonable by said Board for attending the meetings thereof, said secretaries or examiners to be selected from ten practical pharmacists recommended by the Nebraska State Pharmaceutical Association;

Provided, That all such services and expenses, and all the necessary expenses of said Board, shall be paid out of the moneys received by said Board for fees. All moneys received in excess of said per diem allowance, and other expenses above provided for, shall be paid into the State treasury at the end of each year, and so much thereof as shall be necessary to met the current expenses of said Board shall be subject to the order thereof, if, in any year the receipts of said Board shall not be equal to its expenses. The Board shall make an annual report and render account to the State Auditor and to the Nebraska State Pharmaceutical Association of all moneys received and disbursed by it pursuant to this act. And the State of Nebraska shall in no case be liable for any such compensation or expenses. *And provided further*, that said Board shall have the power to discharge any of said secretaries at any time, and to fill any vacancy in the position of secretary whenever from any cause such vacancy exists.

SEC. 2. The said Board shall, within thirty days after its appointment, meet and organize by the election of a President and a Secretary from its own members, who shall be elected for the term of one year, and until their successors are elected, and shall perform the duties prescribed by the Board. Said Secretary shall, in addition to his compensation as a member of said Board, receive a further sum not to exceed $100 annually for his services as said secretary. It shall be the duty of the Board to examine all appli-

cations for registration submitted in proper form; to grant certificates of registration to such persons as may be entitled to the same under the provisions of this act; to investigate complaints and to cause the prosecution of all persons violating its provisions; to report annually to the Governor and to the Nebraska State Pharmaceutical Association upon the conditions of pharmacy in the State, which said report shall also furnish a record of the proceedings of the said Board for the year, and also the names of all pharmacists registered under this act. The Board shall hold meetings for the examination of applicants for registration, and the transaction of such other business as shall pertain to its duties, at least once in four months, said meetings to be held on the first Tuesdays of March, July and November in each year; and shall make by-laws for the proper fulfillment of its duties under this act; and shall keep a book of registration in which shall be entered the names and places of business of all persons registered under this act, which book shall also specify such facts as said persons shall claim to justify their registration. The record of said Board, or a copy of any part thereof, certified by the Secretary to be a true copy, attested by the seal of the Board, shall be accepted as competent evidence in all courts of the State. Three members of said Board shall constitute a quorum.

Sec. 3. Every person who shall, within three months after the passage of this act takes effect, forward to the Board of Pharmacy satisfactory proof, supported by his affidavit, that he was engaged in the business of a dispensing pharmacist, on his own account, in this State at the time this act takes effect, in the preparation of physicians' prescriptions, or that at such time he had been employed or engaged three years or more as a pharmacist in the compounding of physicians' prescriptions, and was at said time so employed in this State, shall, upon the payment to the Board of a fee of $2, be granted the certificate of Registered Pharmacist. *Provided*, That in case of failure or neglect to register as herein provided, such person or persons shall, in order to be registered, comply with the requirements provided for registration as a licentiate in pharmacy herein after described.

Sec. 4. No person, other than a licentiate in pharmacy, shall be entitled to registration as a pharmacist except as provided in section 3. Licentiates in pharmacy, in the meaning of this act, shall be such persons, not less than 18 years of age, who shall have passed a satisfactory examination touching their competency before the Board of Pharmacy. Every such person shall, before an examination is granted, furnish satisfactory evidence that he is of temperate habits, and pay to the Board a fee of $3; *provided*, That in case of the failure of any applicant to pass a satisfactory examination, the money shall be held to his credit for a second examination at any time within the year. The said Board may grant certificates of registration, without further examination, to the licentiates of such other Board of Pharmacy as it may deem proper, upon a payment of a fee of $2.

Sec. 5. The said Board may grant, under such rules and regulations as it may deem proper, for a fee not exceeding $1, the certificate of registered assistants to clerks or assistants to pharmacy, not less than 18 years of age, who at the time this act takes effect, shall be engaged in such service in the State, and have been employed or engaged two years or more in the practice of pharmacy, but such certificate shall not entitle the holder to engage in such business on his own account, or to take charge of or act as manager of a pharmacy or drug store.

Sec. 6. Every registered pharmacist, or registered assistant, who desires to continue the practice of his profession shall annually, after the expiration of the first year of his registration, during the time he shall continue in such practice on such date as the Board may determine, pay to the said Board a registration fee to be fixed by the Board, but which shall not exceed $1 for a pharmacist or 50 cents for an assistant, for which he shall receive a renewal of said registration. Every person receiving a certificate under this act shall keep the same conspicuously exposed in his place of business. Every registered pharmacist or assistant shall, after changing his place of business or employment, as designated by his certificate, notify the secretary of the Board of his new place of business. If any pharmacist or registered assistant shall fail or neglect to procure his annual registration, or to comply with the other provisions of this section, his right to act as such pharmacist or assistant shall cease at the expiration of ten days from the time of notice of such failure to comply with the provisions of this section shall have been mailed to him by the secretary of said Board.

Sec. 7. Any registrations obtained through false representation shall be void, and the Board of pharmacy may hear complaints and evidence, and may revoke such certificates as it may deem improperly held.

Sec. 8. Any proprietor of a pharmacy who, not being a registered pharmacist, shall, ninety days after this act takes effect, fail or neglect to place in charge of such pharmacy a registered pharmacist, or any such proprietor who shall by himself, or any other person, permit the compounding or dispensing of prescriptions, or the vending of drugs, medicines or poisons, in his store or place of business, except, by, or in the presence, or in and under the supervision of a registered pharmacist or registered assistant; or any person, not being a registered pharmacist, who shall take charge of or act as manager of such pharmacy or store, or who, not being a registered pharmacist or registered assistant, shall retail, compound or dispense drugs, poisons or medicines of any kind, or any person violating any other provision of this act to which no other penalty is herein attached shall be deemed guilty of a misdemeanor, and for every such offense, upon conviction thereof, shall be punished by a fine of not less than $10, or or more than $100, and in default of payment thereof, shall be imprisoned not less than ten days, nor more than ninety days, or both such fine and imprisonment, in the discretion of the court.

Sec. 9. Nothing in this act shall apply to the busi-

ness of any retail dealer engaged in business at a distance of not less than five miles from the place of business of any registered pharmacist; nor with the exclusive wholesale business of any dealer, except as provided in section 10, nor with any resident registered physician dispensing his own medicines on his own prescriptions.

SEC. 10. No person shall add to or remove from any drug, medicine, chemical or pharmaceutical preparation, any ingredient or material for the purpose of adulteration or substitution, which shall deteriorate the quality, commercial value or medical effect, or which shall alter the nature or composition of such drug, medicine, chemical or pharmaceutical preparation, so that it will not correspond to the recognized tests of identity or purity. Any person who shall thus willfully adulterate or alter, or caused to be adulterated or altered, or shall sell or offer for sale any such drug, medicine, chemical or pharmaceutical preparation, or any person who shall substitute or cause to be substituted one material for another, with the intention to defraud or deceive the purchaser, shall be guilty of a misdemeanor and be liable to a prosecution under this act. If convicted he shall be liable to all the costs of the action and for the first offense be liable to a fine of not less than $10 or more than $100, and for each subsequent offense a fine of not less than $25 or more than $150. On complaint being entered, the Board of Pharmacy is hereby empowered to employ an analyst or chemist, whose duty it shall be to examine into the so-called adulteration, substitution or alteration, and report upon the result of his investigation, and if the said report shall be deemed to justify such action, the Board shall duly cause the prosecution of the offender, as provided in this act.

SEC. 11. All suits for the recovery of the penalties prescribed in this act shall be prosecuted in the name of the people of the State of Nebraska, in any court having jurisdiction, and it shall be the duty of the prosecuting attorney of the county where such offense has been committed to prosecute all persons violating the provisions of this act, upon proper complaint being made to them.

SEC. 12. The pharmacist of every house dispensing and compounding medicines, registered under this act, shall be exempt and free from all jury duty in the courts of this State.

SEC. 13. This act shall take effect and be in force from and after its passage and publication according to law.

DOMESTIC CORRESPONDENCE

RUMEX ACETOSA IN CANCER.

Dear Sir:—I have recently seen several communications in the journals in regard to the rumex acetosa or small-leafed sorrel. I have also had some experience with the herb that may be of some interest to the profession.

In 1849, directly after I began practicing medicine, an old gentleman, a very warm friend, proposed to give me a secret remedy for cancer, which he said he had obtained from a brother, who was a graduate of Jefferson Medical College, and then practising in one of the interior towns of Pennsylvania. He said it would cure every time without fail, and he brought out an old worn sheet of unruled foolscap paper, written over one-half of its surface, minutely detailing the season in which the broad-leafed, or horse-sorrel, was to be gathered and prepared. According to the recipe the directions must be followed out most scrupulously or the efficiency of the remedy would be impaired. The herb was to be gathered at a certain stage of development, bruised in a wedgewood or glass mortar, the juice expressed out on a pewter plate, dried in the shade to the consistence of honey, then spread on chamois skin or buck skin, and, after abrading slightly the surface of the diseased part, to be applied daily till the diseased tissue separated from the sound, when the dead mass could be easily removed. After this the best dressing is a weak solution of the medicine in water.

The different species of rumex have the same chemical constituents, and the broad-leafed sorrel not being easily obtained in the locality where I then was, I gathered a quantity of the small-leafed, or sheep-sorrel, at the proper time, to-wit: when the bloom began to drop, and bruised it in an iron mortar and expressed the juice out on a common delf-ware plate, as I was not the owner of a pewter one, and when evaporation had brought it to the proper consistence I put it up in a gallipot. In the first case of epithelioma that came under my care I used it, and was successful. I have used it frequently since, both successfully and unsuccessfully, and I feel safe in saying that the diagnosis, in some at least, of the successful cases, was correct, as it was confirmed by those high in authority and by the microscope. I think it is fair to admit that it is one of the best and safest escharotics we can use in such cases; and when our patients are not willing to submit to removal by the knife, when the glands are not involved, and the disease has not encroached too much on the underlying tissues, we can safely use this in preference to any other escharotic. Of course the use of any of this class of remedies cannot be compared to immediate removal by surgical procedure.

Very truly yours, JAMES LAMB, M.D.

Aurora, Ind., Feb. 21, 1887.

FUNGUS CEREBRI REDUCED BY PRESSURE.

Dear Sir:—An interesting case of cranial fracture, followed by fungus cerebri, removed by ligature, and reported in THE JOURNAL of February 5, prompts me to report a case somewhat like it, and with a like favorable result from different treatment.

F. M., aged 2½ years, was kicked by a horse, on the left superior posterior parietal bone, crushing the bone, and producing compression of the brain, without breaking the skin, but followed by a swelling the size of an egg. I saw the child about 4 o'clock in the afternoon of the same day, and immediately made an incision the whole length of the tumor; coagulated blood, and quite a considerable amount of brain,

following the knife. A conical incision enabled me to see that the bone was comminuted, and the brain investments very much torn. I removed eleven pieces of bone; trimmed off the jagged parts of the dura mater; brought the cut surfaces of the scalp together by sutures; and dressed with the water dressing. The case progressed favorably for nearly two weeks, when a fungus cerebri appeared and grew to the size of a hen's egg, which I proposed to excise, but as the mother refused her consent, I took an old leaden tea-caddy I found in the house—it was in the country, some fifteen or sixteen miles from my residence—folded the plate to a proper thickness, and, with a hammer made it concave. I then placed over the growth two thicknesses of lint, smeared over with cerate, a linen compress on that, then my lead compress, and retained all by moderate pressure with a bandage, which was drawn tighter from day to day, until the entire growth was absorbed. In due time the external wound healed, and the child grew to be as bright and intelligent as the other children of the family. Very truly yours,

F. Walton Todd, M.D.

Stockton, Cal., Feb. 14, 1887.

"THE ETIOLOGY AND CURE OF ASTHMA."

Dear Sir:—A paper under the above title recently appeared in The Journal which called out some comment to which the author has objected in the last issue (March 19). In this last note he seems to have gone quite as far as the reviewer in refuting his former claims.

From the comprehensiveness of the title and from the tenor of his paper one would naturally suppose he had some information to impart about asthma, but he now claims that he was not writing about asthma, but about "a rarer form of the disease." Every laryngologist, and probably nearly every general practitioner, knows that cauterization of the turbinated bodies will cure rare cases of asthma.

If the gentleman had entitled his paper "A Case of Asthma Benefited by Treatment," and had confined his subsequent remarks to a statement of facts as pointed out in the review, he would not have been troubled by the irritation into which he has wrought himself; but might have rested content with the knowledge that he had given a most excellent and interesting account of his own sufferings and the manner in which they were relieved. The charge which he makes of misrepresentation will be found wholly gratuitous by those who care to read the review. Very truly yours,

E. Fletcher Ingals.

64 State St., Chicago, March 20, 1887.

MISCELLANEOUS.

The Medicine and Hygiene of the Talmud.—Since the publication of my address on "Jewish Hygiene and Diet in the Talmud and various other Jewish Writings heretofore Untranslated," delivered before the American Medical Association in 1884, at Washington, D. C., I have been constantly urged by the profession to translate and publish the medical and hygienic portion of this "wonderful" compilation, the Talmud. I therefore beg to state to the profession at large that I have concluded to translate and publish from the Talmud everything relating to medicine, providing that, prior to the undertaking. I can receive one thousand subscribers for the book. Such subscription may be addressed to me in the following words:

I, the undersigned, agree to take one (or more) copy of the "Talmudic Medicine" of Dr. von Klein, which shall not exceed $5.00 in cost for 500 octavo pages, or at $1.00 for each 100 pages, payable on delivery. Under no other circumstances will I undertake this labor. No more copies will be published than the number subscribed, and fifty extra copies for distribution to the principal medical journals for review. Carl H. von Klein.

110 E. 2d St., Dayton, Ohio.

[Exchanges are requested to publish or notice as soon as possible.]

The Miami Medical College has, recently, become the Medical Department of the University of Cincinnati.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 12, 1887, TO MARCH 18, 1887.

Major C. H. Alden, Surgeon, ordered for duty at the U. S. Military Academy, West Point, N. Y., relieving Lieut.-Col. Andrew K. Smith, Surgeon, who will report by letter to the Surgeon-General. S. O. 52, A. G. O., March 5, 1887.

Capt. Wm. F. Carter, Asst. Surgeon, granted leave of absence for one month, on surgeon's certificate of disability. S. O. 25, Dept. Texas, Feb. 24, 1887.

Capt. Geo. McCrnry, Asst. Surgeon, leave of absence extended one month. S. O. 52, A. G. O., March 5, 1887.

Capt. R. W. Johnson, Asst. Surgeon, ordered for temporary duty at U. S. Military Academy, West Point, N. Y. S. O. 51, A. G. O., March 4, 1887.

First Lieut. Guy L. Edie, Asst. Surgeon, granted leave of absence for one month, to take effect about March 1, 1887. S. O. 27, Dept. Texas, Feb. 28, 1887.

Capt. Wm. F. Carter, Asst. Surgeon, leave of absence extended four months, on surgeon's certificate of disability. S. O. 57, A. G. O., March 15, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING MARCH 19, 1887.

Bradley, George B., Surgeon, detached from Marine Hospital Philadelphia, Pa., and granted six months' leave.

Steele, Jno. W., P. A. Surgeon, ordered to Marine Hospital, Philadelphia, Pa., without delay.

Parker, J. B., Surgeon, ordered to the U. S. S. "Ossipee."

Siegfried, C. A., Surgeon, ordered to Baltimore, Md., on special duty.

Hugg, Joseph, Surgeon, placed on retired list March 17, 1887.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDED MARCH 12, 1887.

Banks, C. E., P. A. Surgeon, to proceed to Chicago, Ill. and assume temporary charge of the service. March 10, 1887.

THE

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EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

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ORIGINAL ARTICLES.

HYSTERO-NEURASTHENIA, OR NERVOUS EXHAUSTION OF WOMEN, TREATED BY THE S. WEIR MITCHELL METHOD.

Read before the Chicago Medical Society, March 7, 1887.

BY FRANKLIN H. MARTIN, M.D.,

PROFESSOR OF GYNECOLOGY IN THE CHICAGO POLICLINIC; FELLOW OF CHICAGO GYNECOLOGICAL SOCIETY.

Hystero-neurasthenia is a name that I will take the liberty of giving to an often recognized class of female difficulties which has not a well defined place in medical literature.

The symptoms of this class of cases are as difficult to enumerate and describe as the individual cases are difficult to manage to a successful issue. Under the term hystero-neurasthenia, I wish to include no symptoms which can be traced to a distinct pathological lesion of any one organ, but to a host of symptoms that can be accounted for in no other manner than by being the result of a partial or general nervous inefficiency, or perversion, of the nerves controlling the organs peculiar to women.

The first of these conditions, nervous inefficiency, may be congenital, or the result of excessive exercise of the functions of the organs of the pelvis, from a long and prolific child-bearing season, excessive cohabitation, or undue treatment of a local variety. The second condition, nervous perversion, will be found the result of excessive brain work, either as a consequence of early study, or from literary excess, teaching, and clerical work common to women of maturer life, the worries of motherhood, anxieties of impending or actual misfortune, prolonged lactation, nursing of the sick, excessive physical labor, and, rarely, masturbation.

The symptoms of this class of cases are too numerous to mention in detail, and inasmuch as each case has its own peculiarities, I will remain content to recite a few of the most prominent and common symptoms. General anæmia, or deficiency of red corpuscles, is a very common, but not universal symptom. The anæmic cases usually complain of loss of flesh, although it is well known some anæmic patients gain flesh; and where this state of affairs exists the functions of the generative organs usually suffer, as is often manifested by coincident amenorrhœa and sterility. Upon questioning these patients the key-note of a general outpouring of subjective symptoms is struck, when the womb is reached in the list of interrogations—bearing-down pains, backache, leucorrhœa, neuralgia in ovarian region, painful menstruation (pain before menstruation, during the flow, and for days following), frequent urination, constipation—"bowels never move without medicine"—painful defecation, neuralgia in all parts of pelvis at regular or irregular intervals, in the ovarian region, one or both sides, uterus, vagina, bladder, perineum, rectum, and even the urethra. Standing and walking is accomplished very seldom without fatigue, and scarcely less rarely without pain in the loins and lower pelvic region.

These sufferers usually have worn out the patience of one or two physicians; many times are pronounced hysterical incurables, who imagine many of their aches, and are therefore considered unworthy of more dignified attention than that required to prescribe an anodyne, a hypnotic or a blister. These cases are much too interesting, and the credit of effecting a permanent cure of too much gratification, to say nothing of duty, for us to be satisfied to listlessly alleviate symptoms, when it lies in our power to do more.

Upon physical examination this class of patients present few well-marked subjective symptoms. There is no evidence of hereditary taints. As this trouble is referred to the uterus, the first local examination is made of the pelvic organs. The vulva is often pale in color from general anæmia. The mucous membrane within the vagina presents a faded, lax appearance. The external genitals are sometimes bathed with mucus secretion from the relaxed vulvo vaginal glands. The vagina is often sensitive, bathed with mucus frequently; at other times abnormally free from secretion. The uterus is normal in size and location, with perhaps the exception of slight prolapsus from the general relaxation of all the surrounding parts. It is very movable, as a rule. The organ is very liable to be marked by hypersensitiveness on pressure. A slight mucus discharge from the cervix, of a milky character, is rarely absent. The cervix is usually pale in color. Pressure in the ovarian region causes pain, or at least a feeling of sensitiveness; the ovaries can be frequently engaged between the hand placed over the relaxed, thin abdominal walls, and the index finger in the vagina, and will often be found considerably enlarged. The *rectum* is rarely found in other than a relaxed condition. There is frequently much tenderness about the anus, with slight nodular enlargement of the external hæmor-

rhoidal veins. Fæces are often found in the lower bowel. The bladder is often sensitive to slight pressure, and not rarely, where the patient is anæmic, will there be a pouching of its neck. The urine is pale, and commonly filled with phosphates and mucus. Upon manipulating the abdominal wall there is scarcely a point that does not seem most sensitive, except, perhaps, the ovarian region. The muscles are flabby and relaxed upon the limbs, although occasionally covered with soft fat.

The heart action in these cases, while not strong, is usually regular. The exception to this is in very nervous patients where, through sympathy of a rebellious or weak stomach, palpitation and heart-burn will be a complication. The capillary circulation is frequently slow, as evidenced by the slow return of the circulation to a part deprived of its blood by pressure of the finger.

The digestion is often fair, but rarely very good. Attacks of nausea are frequently complained of, coming on without any warning and disappearing in the same way. Occasionally downright attacks of indigestion are experienced, which may not be confined to the stomach, but affect the whole digestive tract. These attacks may be accompanied with headache. Spinal tenderness in one or more regions is often present; this will frequently be found quite marked in the lower dorsal or first lumbar region.

Besides the symptoms enumerated, which can be said to rank under the head of hystero-neurasthenia, we may have, in addition, all the symptoms that are common to general neurasthenia, the special symptoms about the pelvis determining the disease, because of their greater prominence and severity. While we have found by general examination of these cases, both subjective and objective, not one organ in the pelvis or abdomen in vigorous health, and not one free from weakness and tenderness, we have not found an actually diseased member—that is, diseased from any pathological condition peculiar to itself, but rather from a general lack of balance between supply and demand in the nutrition of several. And while it is rare for a single case to present all the symptoms above noted, occasionally, as many of us can testify, *all* these and others will manifest themselves in their most aggravating form in one suffering individual.

Though no exact pathology of these cases has been definitely demonstrated, except through the deductions drawn from successful treatment, the fault is generally conceded to lie in a weakened or incomplete state of that part of the nervous system which presides over the nutrition of the organs involved. A general malnutrition, then, of the parts implicated is that towards which we must direct our treatment. As these patients always complain of being tired, the first indication for treatment is rest. As they are almost invariably anæmic, proper feeding is the second indication. As a case is rarely found in which nervous debility is not the rule, seclusion from annoying surroundings is a third indication. Sleeplessness, which is frequently a conspicuous symptom, gives us a fourth indication.

The prominent requirements, then, in these cases are: 1. Rest. 2. Proper Feeding. 3. Seclusion. 4. Sleep.

How can we obtain these four requisites without over-drugging our patients? We must introduce some means by which an irritable body, that is unable to assume the recumbent position without resting upon some painful spot, may lie down without pain. We must feed properly a patient whose appetite is capricious, whose stomach may be irritable and rebellious, whose bowels will not "agree" with anything that is suitable to sustain life. We must put into seclusion patients who imagine they require the sustaining sympathy of innumerable dear ones. We must produce sleep in a class of patients who have long ago worn out all the safe and efficient hypnotics.

I have had experience enough with these cases to satisfy myself that permanent cures can very often be effected by a line of treatment that has been practised so successfully in general neurasthenia by that eminent Philadelphian, S. Weir Mitchell. While Dr. Mitchell was the originator of this systematic line of treatment, of which I can only hope to give merely an outline this evening, it has been adopted with great success by others, and by none with greater success than Playfair, of London.

Dr. Mitchell seeks to meet the four requirements in the treatment of these cases by first getting full control and confidence of the patient. Without this first requisite, the case is a failure. After this is accomplished he makes the remaining part of the problem feasible by a combination of entire rest and of excessive feeding made possible by passive exercise obtained through the use of massage and electricity.

A physician, to treat these cases successfully, must have an eye to detail, possess at least the ordinary amount of tact, perseverance, firmness, and good executive ability. The nurses employed should be educated, intelligent, strong young persons, who are able and willing to work, and who can make themselves very agreeable; who possess tact and firmness, the latter without sternness. They should understand and be capable of performing thorough massage, administer a vaginal douche properly, and be adepts at preparing tempting sick-room delicacies.

In further describing this system of treatment I will give, for the sake of brevity, the details of treatment of a typical case of the kind that recently came under my observation:

The patient, a young married lady in the better class of society, without children, had been treated for "womb difficulties" for three years by at least two St. Louis physicians, from which city she had recently moved to Chicago. She had gradually become worn out from unsuccessful local treatment, and was about to give up in despair. She was in an extreme state of anæmia; had been gradually reduced in flesh from 120 to 100 lbs. Menstruation irregular and painful throughout. Bowels never moved without assistance. Appetite gone, and what little food she could be induced to take remained like a load on her stomach and gave her considerable pain. Besides the loss of appetite and indigestion, she had considerable ovarian neuralgia, general pelvic hyperæsthesia, and intense sacralgia. She was also troubled with persistent insomnia.

Physical examination elicited no localized patho-

logical condition. Uterus natural in size and location, and movable. Ovaries not enlarged, but very tender. While there was general hyperæsthesia in every direction from the vagina, there evidently was no cellulitis or peritoneal inflammation. The urine was normal.

The scheme of treatment mentioned above was explained to the patient, and she immediately acquiesced when advised to make a trial of it. Contrary to Dr. Mitchell's advice, she was not separated from her family, there being but her husband, and he at home but a small portion of the day. Be it remembered, she was unable to retain even a very little of the blandest food without distress.

She was immediately put upon an exclusive milk diet. The diet for the first day was laid down as three ounces of milk every three hours. She took at this rate, in the first twenty-four hours, twenty-one ounces of milk. The second day the amount was increased to twenty-eight ounces by increasing each allowance to four ounces.

The third day, as the patient was doing remarkably well and the stomach was free from pain, one ounce of thinly cut stale bread, well toasted, was given in addition to the milk that was due at the three regular meal times.

The fourth day six ounces of milk were taken every two hours, with double the amount of toast that was given the day before. All the dyspeptic symptoms had at this time disappeared, and the patient, notwithstanding the amount of milk taken, commenced to ask for her meals.

The fifth day she was allowed in addition to the milk, for breakfast, about one and one-half ounces of finely chopped steak of beef rarely broiled; this, with about one ounce of stale bread with butter, was taken with great relish, and without subsequent distress. At noon, on account of a little feeling of nausea, she had nothing except her regular milk diet. An afternoon sleep left her with an appetite for her supper. She was then given three or four raw oysters, with toast and a small cup of tea. This was taken with relish, and there was a disposition to take more.

The sixth day, on account of the patient exhibiting a slight disgust for the large doses of milk, the allowance was reduced to four ounces, it being rendered more nutritious by making it one-third cream. Besides the twenty-eight ounces of milk and cream, she was given this day the juice from one pound of beef in three doses, at 10 A.M. and 3 and 8 P.M. Besides this, the patient took part of a cup of coffee and an ounce of bread with butter for her breakfast, a lamb chop for her dinner, with bread and butter, and raw oysters with toasted crackers and butter for 6 o'clock supper.

From this time on while the patient remained under treatment with me, she had no trouble, with judicious care in its selection, in retaining and relishing an incredibly large amount of food. She would take, besides three large meals a day, a quart of milk and cream, and the juice from one-half to one pound of beef.

The digestion and assimilation of this large quantity of food by an irritable alimentary canal was made possible by systematic passive exercise. The routine of treatment for the day in this case was as follows: At 8:30 A.M., or as soon as the patient had awakened, she was given a light sponge bath, her hair was arranged, and her milk and breakfast taken. At 9:30 A.M., if the bowels had not moved spontaneously, a small rectal injection of soap and water was administered. This was not found necessary after a few days' treatment. At 11 A.M. or thereabouts the patient was given general faradization with an idea of reaching all the motor points of the superficial muscles. The region of the colon, especially of the transverse and descending colon, with special efforts at stimulating the rectum, was systematically sought. This treatment required from three-fourths to one hour's time. The patient usually took a short nap after this treatment. About 1 o'clock she was induced to take a light dinner, or, more properly, lunch.

In the afternoon, if necessary, the nurse would interest the patient by light reading for an hour, if she were not inclined to sleep, which was frequently the case. At 5 o'clock a light, rapid sponge bath was administered, followed by gentle rubbing of skin with a dry bath glove. This proceeding occupied thirty minutes, after which the patient was again allowed to rest for an hour. At 6:30 or 7 P.M. she was given her dinner. The milk, in the meantime, had been administered at regular intervals throughout the day. After the dinner or supper the patient was read to or amused in some way, or, if she was so inclined, allowed to sleep. Nothing, except the amount they eat, will astonish one more than the amount of sleep some of these patients seem to require.

At 8:30 or 9 P.M. the regular preparation for bed commenced. This began with a systematic massage which included all parts of the external muscular system, and occupied about one hour. The patient was then moved to a couch, given a large vaginal douche of hot water while in the recumbent position; her bed in the meantime was changed, and she was at last, after a hard day's work in which she had been but a passive laborer, deposited in it for the night.

This patient remained under this systematic treatment for about eighteen days only, at the end of which time it did not seem necessary that she should be kept under such close observation longer. She expressed a very strong desire to go with her husband, who was about to make a business trip South. Inasmuch as she was, to all appearances, now perfectly well, I gave my consent to this arrangement. She could take and digest more food than she had been able to for years, without a dyspeptic symptom; her menstrual period had passed without a pain; the pelvic hyperæsthesia, while not entirely subdued, was much improved; the vaginal leucorrhœa was entirely checked. The patient had gained ten pounds in weight. Her skin was now ruddy and healthy in appearance, and she felt strong, well, and in the best of spirits when she left the city. I have since seen the patient, and she assures me that she is in the best of health, and she certainly appears so.

All cases, however, in which the treatment described here seems applicable, will not give the brilliant results that twenty days' treatment accomplished

for me in the above case. Every symptom of importance here disappeared after four days' treatment, and subsequently there was nothing left to accomplish but to increase the flesh and strength of the patient. The getting-up was gradual; at the end of about the ninth day she was allowed to sit up in a large upholstered armchair for one hour in the forenoon. This was followed rapidly with greater liberty, and at the end of the fifteenth day she was about the room fully dressed; and at the end of the twentieth day was ready to travel.

Frequently grave complications are met in the treatment of these cases. Occasionally a patient has been thoroughly disgusted with milk on account of excessive use of it in previous treatments. Others have the impression that it "makes them bilious," and it is not taken on that account. By taking pains to explain that milk is one of the most perfect forms of food, and that it is an important factor in the successful treatment, most patients will be induced to try it in small, often repeated doses. There is occasionally a patient found, however, who cannot take milk in the raw state; the taste is objectionable, and the stomach rejects it. In such cases milk will often be well received if prepared with Fairchild Bros. & Foster's peptogenic milk powder. This is often also a valuable addition when the patient becomes tired of milk late in the treatment. Beef juice prepared after Weir Mitchell's formula, either raw or cooked, is sometimes a good substitute. Patients are frequently found who can take scalded milk who cannot bear it in the raw state; and, again, frequently if mixed with cream, when milk alone nauseates. Where this important article of diet is not tolerated under any disguise, other food must be adopted which will accomplish the same end. Here, in selecting a suitable substitute for milk from the long list of natural and artificial foods, is where the ingenuity and experience of the physician are heavily taxed.

Occasionally among these patients will be found one who requires an alcoholic stimulant. This is often indicated where there are sudden attacks of nausea. Hoff's fluid malt often arouses a desire for food, if given three or four times a day in small doses; the hop principle often acting, in addition, as a pleasant hypnotic in these cases.

Where the bowels are not sufficiently stimulated by the manipulation and faradization to cause an evacuation daily, a capsule containing ext. nux vomica ¼ gr., ox. gall. gr. ij, aloin ⅙ gr., or something similar, should be administered at bedtime.

In spite of feeding, rubbing, and faradization, patients are occasionally found whose insomnia will persist. These cases I endeavor to control by giving them a hypnotic in such a way that they are not aware of the fact, and are led to attribute the sleep to the treatment. A favorite method is to saturate a loose vaginal tampon with a solution of chloral in glycerine and insert it the last thing at night. Sufficient chloral is absorbed to produce sleep, and the local anodyne effect upon the surrounding organs is not unpleasant. This can gradually be reduced in strength as the effect of the general treatment is sufficient to make it unnecessary. I have found also the triple valerianate pill of quinine, zinc and iron, as manufactured by W. H. Schieffelin & Co., valuable in cases in this condition. Asafœtida pills are sometimes valuable at this point. The pills manufactured by Eli Lilli & Co., of Indiana, conceal the taste and odor of this drug perfectly.

The urine should be examined occasionally in these cases to guard against harm arising from the excessive feeding.

If iron is indicated it can be given in small doses advantageously, in the fluid malt, or, in case malt is not an article of diet, in a capsule. For administration in malt citrate of iron, quinia, and strychnine in 1-grain doses make an elegant preparation.

Success, however, depends much more upon the attendance the patient receives than upon the selection of drugs. Massage is given here with the idea of producing as much tissue change as possible, and the nurse who can accomplish the best results in this direction, as indicated by the amount of food taken and assimilated, is the greatest success. The faradization I do not usually intrust to a nurse, although an intelligent trained nurse can soon be taught to manipulate the faradic machine. The end sought here is simply to cause contraction of all the muscles of the body that can be brought under its influence, and to stimulate the circulation. For this purpose I place a large electrode under the two feet of the patient as she lies in bed with knees flexed; this electrode is attached to one pole of an ordinary interrupted faradic battery. At the other pole I attach a bifurcated cord terminating in two small hand electrodes, made to fit the palm of the hand in such a manner as not to interfere with the flexion of the fingers. A process of kneading or petrivage is performed over the surface of the body, dwelling particularly upon the motor points of the muscles, while the current is simply strong enough to produce an agreeable prickling sensation.

In this paper I have not been able to do more than to give the merest outline of a treatment of a condition which we all often meet in practice. In citing the particular case I have, I did so because of its being a typical one of the kind, and one in which the complete treatment in its most uncomplicated form could be demonstrated as a success. From this any intelligent physician can readily comprehend the scheme of treatment, and can as readily understand how many difficulties might arise that would complicate the treatment, at the same time not necessarily proving insurmountable barriers to its ultimate success.

163 State St.

WATER CLOSETS AND PRIVY VAULTS.

Abstract of a paper read before the Ohio State Sanitary Association, February 10, 1887.

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To those who have given study to the above subjects they rank them first in importance. They

know that to construct a perfect water closet or privy vault, the complete mastery of the laws governing gases and organic germs must first be made. What is any house, however elegant in appearance, or expensive in construction, without either one or both of these appliances of the most recent pattern, but a modified "Black Hole of Calcutta?" It is but a place of confinement where *malaise*, headache, debility, and low vitality dwell, and where the organic germs of fever, diphtheria, scarlatina, measles, cholera and small-pox find their habitat.

The sanitarian of to-day, to be at his best, should be familiar with all that chemistry can teach, mechanics demonstrate and engineering plan. So vast, intricate and numerous are the laws of sanitation, we can, at present, no more make them all subservient to our wills, than we can make a plain of the vast rock-ribbed mountain of our far west. But if we are incessant, earnest, and honest in our struggles for facts, we can pierce these laws as the mountain ranges are pierced, and utilize the materials found for the lengthening of life, and the perfecting of health.

First, then, what can be said regarding water closets? We can say that the three classes of men who prosecute both the science and art of sanitation, the physician, the plumber and the engineer, have attacked this problem together and singly, month after month, year after year, each marked by unremitting thought, and plan, and experiment, until a substantial, if not a triumphant victory has rewarded their perseverance. These workers have brought forth closets, numerous and various in style as leaves of autumn, that not only squarely meet all foul and fatal eminations from all forms of human excreta, but flank, surround and compel to surrender all the forms of bacteria, bacilli, micrococci and their vast progeny.

The essential parts of all these closets are the bowl, the container, the trap, with water seal or seals, supply soil and vent pipes. Some makes contain all the above parts in their construction, some only a portion. The thought that has filled the minds of all closet makers is how to control the gases—the odors—and especially the death laden germs. With every form of closet, save one, the trap is relied on in the soil pipe, whether leading from closet, bath tub or kitchen sink. Without this imperious necessity called a trap, the more sewers, soil pipes, waste pipes, and even ventilating pipes we put into our houses the more surely will they be dens for thieves to steal our health, and threaten, and eventually take our lives. Our houses are but expensively constructed receivers of foulness, and festering filth, containing "pestilence that walk in darkness and destructions that walketh at noonday." What then, is the nature of this seemingly imperative necessity? It is simply a bend in the pipe leading from the closet, a half "S," three-quarter "S," "S" or "D," a bag shape, a bottle shape or a bell shape. But they are all but different kinds of bends. As the art of plumbing is more and more advanced, the simple half or three-quarter "S" is preferred. I can say, then, the trap "is only that and nothing more." Behold then how great a matter a little trap preventeth. Of course these bends are placed there that the most depressed portion will at all times be filled with water. The water thus retained is called the water seal. And this little pool of water, often very impure, very offensive, and very foul, may be all that stands between us and death.

Now, a word about some of the closets in daily use with us. I cannot speak of all of them, or even of all the leading kinds, or perhaps, not even of the very best kinds. The first I shall notice is the "Hilliard Hopper." This is one of the most simple in construction, having but a bowl attached to a four inch soil pipe with a three-quarter "S" trap. A tank is used for the water supply, and is self acting, that is, pressure upon the seat causes a dash of water to wet the bowl, and upon removing the pressure an additional dash of water completes the action. The last gush is supposed to carry the deposit through the trap and also leave the trap full of pure water as a protection. For places where the closet is in almost constant use it answers fairly well; but for occasional use, I do not approve of it. In the first place, as now made, it does not use enough water. In the second place, while in use the gases from the deposit are constantly passing off into the room. And thirdly, the rush of water is not always sufficient to carry the deposit well through the trap and into the soil pipe. Indeed, in certain cases, quite a portion is left to decompose and poison continuously the atmosphere. The next is the "Zane Sanitary Closet." This is much more complicated and in some respects a better closet. It has a double protection in the form of two water seals; one in the pipe and one in the bowl, and it uses more water. Very similar in construction is the "Demorest." They are both plungers, and both leave flushing chambers.

These closets have many excellent qualities and are generally very satisfactory to those who use them. My objections to them are that nothing leaves the bowl when in use, and will not leave it except when the handle is pulled up, so that they are not well suited for children, imbeciles and careless people. But in the opinion of Dr. Tracy, of New York, and others, the most threatening defect is in the plunging chamber, which, in time, is coated with a very foul organic matter that is a favorable bed for the rapid culture of disease producers. In many of the most carefully plumbed houses of our town containing these closets, diphtheria has again and again visited different members of the family, and the supicions were centered on the foul flushing chamber as the cause. I only note this suspicion. My own knowledge does not verify it. While there is no trap closet I would recommend, that I know, I am very favorably impressed with a closet made by the Kelly Bros., of Chicago, and called the "Self-acting Water Closet." While not familiar with its actual working, it contains principles so often tested, that I would consider the time well spent, had I a house to furnish, in making myself thoroughly acquainted with it.

The question is often asked, can we get something better than the common "S," or at least something

which will assist in making the seal more perfect? Many efforts have been made and appliances adopted. Notably among them is the "Bowers Trap." This is a rubber ball that floats upon the water seal, and being made very carefully, as is also the trap, it fits accurately against the bottom of the pipe and so remains while the closet is at rest, and is intended to assist the seal in effectually preventing the escape of sewer gas. My experience with this trap is favorable, but those who perhaps know much more than I, object to it on the ground that gases form a stratum immediately under the ball, and when it is displaced by sewage, this stratum passes at once into the apartment. I have been much interested in the study of another ball trap on a wholly different plan. It is an invention of H. C. Lowrie, a member of the Denver Society of Civil Engineers. It is a rubber ball filled with shot, and for a four inch pipe, weight four and a half pounds, and so firmly is it seated that it takes twenty-five pounds of pressure to displace it. The trap used with this ball has a sort of elbow, or "race way" the inventor calls it, through which the ball rolls when displaced by the proper weight of sewage, only to at once take its place again when the pressure has passed, and firmly keep it, thus forming a perfect seal in all respects and doing away with vent pipes of all descriptions. Of course, in the construction of these balls and traps, everything must be of the most accurate make, and of the best materials, which must add considerably to the expense of furnishing a house. This is to me a great recommendation, as the most expensive materials of all kinds only should be chosen if they are of intrinsic value; for plumbing should be done regardless of cost.

In my opinion, there is not a more senseless practice than that of hawking a plan for plumbing from shop to shop, for the lowest bid. The builder of a house is as helpless in the hands of the plumber as he is, when sick, in the hands of the doctor. All kinds of frauds, experiments, and mal-practice can be heaped upon him, while he, all the time, is utterly unable to detect the impositions. If economy must be practiced, let it be done by doing without some of the multiplied gables, projections and oppressive ugliness of the so-called Queen Anne's and Mansard additions. In the midst of all these subtile agents, it is a comfort to know that experienced chemists like Pumpilly, Wernich, and many others, have found that a good water seal with the usual surroundings, will prevent all organic particles from passing back, and nearly all of the different sewer gases.

I close what I have to say on closets with a word for one with which I am familiar. The inventor is a resident of Youngstown, Ohio. So confident is he of its unequaled qualities, that he has placed them in some of the hotels and resorts, where they would get the most trying tests, agreeing to remove them at his expense if not fully approved. This inventor throws aside traps and vents of every kind, and places the closets upon a straight soil pipe. This closet consists of a seat, with air space in front between it and bowl, two supply pipes, one for the flushing rim and one for a spray seal near the bottom of the bowl, a copper cup, with or without a rubber ring that comes up and surrounds the lower end of the bowl and contains water on both sides of the end. The operation of this closet is as follows: Pressure being made upon the seat, the cup is at once carried to the side, the valves of both supply pipes open at the same moment, and two strong streams of water flow, one around the rim, and the other dashing in a thick sheet of spray across the lower end of the bowl before falling into the straight soil pipe. The action of these currents produces a rapid suction into the soil pipe carrying with them instantly all deposits and gases. These currents are continuous, and cease only when the weight is off the seat, at which instant the cup again takes its place and is rapidly filled by the last proportions of water of both supply pipes. Here we have an odorless closet, and one that neither allows gases nor deposits to remain an instant in the bowl, a quality no other closet has, of which I have ever read or seen. It was put to a crucial test in one of our plumbing shops. Three of the approved closets were placed in a row with it over the same soil pipe, a four inch, and filled for use. This soil pipe was heavily charged with illuminating gas, and although used repeatedly, not the slightest odor could be detected either during use or at rest. I have no hesitation in pronouncing it by far the best closet with which I am acquainted; and I say this in the exact language required by the Government Pension office, viz: I hereby vertify that I have no interest either direct or indirect in this closet. It is called "The McAndrews Spray Seal Trapless Closet."

Now, a word as to privy vaults. I have nothing to say in their favor. They are to-day, the most unmitigated, and unpardonable nuisance that infests the face of the earth. The idea of digging a hole in the ground for a permanent receptacle of human excreta, is the most depraved conception of civilization ever found in the desolate wilderness of man's brains. Sanitarians must face the subject squarely, for there is not a city, town, village, or country that is not honey-combed by them; and at this hour, the diggers with bended backs and sweating faces, are adding to the number by tens of thousands. It is but a quesion of time when all our surroundings will be fully saturated; the ground-air charged with virulent poisons, and the ground-water saturated with the germs of death. But the greed and disregard many have for the life, feelings and health of others, render it necessary for every health board to bow before their strength and compromise by mournfully saying, "dig, but the board will determine of what the bottom and sides will be." Brick. or stone and cement are chosen. Each brick will soak up at least one pint of liquid excrement; each stone absorbs the same as if a sponge.

Now with a vault walled with several hundreds of bricks, or many tons of porous stones, either or both of which are fully saturated with vault contents, which in turn, are surcharged with baccilli, micrococci, and all the other germs possible to convey or generate disease, and as these press into the air or ground, instantly the same pores are again filled, this time,

may be, with the discharges of cholera, typhoid, scarlet or yellow fever, diphtheria, dysentery, small pox or measles. How long can we be without epidemics while this order of things lasts?

The question now presents itself, is there any other good way of disposing of excreta save by closet and water carriage? I say most confidently, yes. In city, town, village and country, let every hole, vault and receptacle be cleaned, and filled with fresh and pure material, and having placed the privy upon a solid and well-aired foundation, convenient to the house, and somewhat secluded, and if this privy is six by four feet, place under it a box seven by four, this being kept off the ground by substantial stone corners, and this whole problem is solved, while purity, health, decency, and comfort are secured. This box can be furnished water-tight, thoroughly coated inside and out with hot coal tar and placed in position for $2.25. The projecting foot is covered with a neatly fitting plank, which is all that is displaced and set aside in the removal of contents. The scavengers of our town are anxious to contract for their proper care, removing contents without the knowledge or supervision of the owner, and dispos-of same, at the rate of $4 per annum. The ashes are saved and thrown into this box instead of upon the ash heap. Use lime, or earth or copperas if there is supposed to be occasion, but which, with my daily experience of ten years is, in my opinion, not necessary, the ashes alone from an ordinary house being amply sufficient. Another great advantage is, that the mass to be removed is so nearly odorless and dry, it can be removed at any time without giving offense.

To those unacquainted with the absorbing and deodorizing powers of earth, ashes or lime, I would say that they are marvelous. Those of us who study our Bibles as well as sanitation, find that this subject was dignified and emphasized by the direct command of God.

"Thou shalt have a place also without the Camp, whither thou shalt go forth abroad. And thou shalt have a paddle upon thy weapon: and it shalt be when thou wilt ease thyself abroad thou shalt dig therewith and shalt turn back and covereth that which cometh from thee. For the Lord thy God walketh in the midst of thy Camp to deliver thee and to give up thine enemies before thee, therefore shall thy Camp be holy: that he see no unclean thing in thee and turn away from thee."

The system I advocate so earnestly is not only suited to the isolated cottage, or elegant country house, but also to the mighty city, as year after year demonstrates in the case of Manchester, with her half million of people; or Glasgow, with her hundreds of thousands; or Rochdale or Heidelberg with their tens of thousands.

SPLENECTOMY FOR WANDERING SPLEEN.

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In 1877 I was called to treat Mrs. H., æt. 32, living in the western part of Ohio, a malarial district. She was received into the St. Joseph's Hospital, at Fort Wayne, Ind., where I treated her for an enlarged spleen. In six weeks she left for her home, very much improved, the spleen being reduced almost to its normal size. In March, 1885, I was again called to visit her, in consultation. I found a large tumor occupying the lower portion of the abdominal cavity; it was believed to be an extra uterine fibroma. During the consultation I mentioned the previous history of the case, and the possibility of the tumor being a misplaced and enlarged spleen. She died July 20, 1885. I made the autopsy and discovered that the tumor was the spleen. It had gravitated downward until its lower portion occupied a portion of the pelvic cavity. The immediate cause of death was peritonitis.

After reviewing the history of this case and noting carefully the condition of the blood-vessels and the extent of the adhesions, I was strongly impressed with the idea that, in this case at least, the enlarged and displaced spleen could have been removed with success. So strongly impressed was I, that I determined, if in the future a similar case should present itself, I would attempt it.

In November, 1885, I was called to La Grange to visit Mrs. McKinley. She had a tumor in the left hypochondrium, and complained of pain and a sense of weight in the same region. Her symptoms and the history of the case pointed clearly to splenic disorder of malarial origin. Tertian intermittents filled an important chapter in the case. She had tenderness, nausea, and hæmorrhagic tendencies.

The tumor, at my first visit, occupied the umbilical region. The diagnosis being well defined, I prescribed quinine in large doses, with iodide of potassium occasionally; this treatment was to be pursued persistently. In February, 1886, I visited England, and knew nothing of the progress of the case until after my return in May, 1886. About this time I received a letter from her husband, in which he informed me that the tumor had increased in size, was much lower in the abdomen, and that she was pregnant.

On October 2, 1886, I received a telegram to "come at once." During this visit I met her attending physician, and from him I learned that she gave birth to a living child three weeks before. Upon making an examination I discovered that the tumor was then resting on the brim of the pelvis, and extending above the umbilicus. It had suppurated, and three sinuses existed, communicating with the abscess. The discharges were offensive, almost intolerable. She was emaciated, had chills with profuse perspiration at night, and great loss of appetite. She did not attempt to nurse the child. Her surroundings deterred me from venturing to relieve her by any surgical procedure at her home. By agreement she was brought to Fort Wayne and placed in the St. Joseph's Hospital.

Upon her arrival her condition was one of extreme exhaustion, and grave fears were expressed that she would not survive the operation. A consultation was held with Drs. B. S. Woodworth, H. McCul-

lough and H. S. Myers. The removal of the tumor was decided upon as the only expedient to be thought of.

The cleansing of the skin over the tumor and for some distance around was carried out by washing it with a carbolic acid solution, 1–20, after which stimulants were administered, when she was placed under the influence of ether and removed to the operating table. The line of incision was six inches in length, extending two inches above the umbilicus and made in the *linea alba*. During the progress of the operation the strictest antiseptic precautions were observed. Silk ligatures, previously carbolized, were applied to the bleeding vessels and then cut short; the hæmorrhage was thus arrested completely before dividing the peritoneum. The peritoneum was caught up with forceps and incised with a knife sufficiently to admit the completion of the incision with scissors. This was followed by a free discharge of sero-purulent fluid, received upon the towels and sponges conveniently placed for this purpose. The tumor was now freely exposed, and proved to be a displaced and wandering spleen, indurated and greatly enlarged lying in a peritoneal abscess. I succeeded in lifting the spleen from its resting place, the brim of the pelvis, and in securing the pedicle, composed of the vessels and fibrous tissue, much elongated. While the tumor was partially lifted from its bed, I succeeded in transfixing the pedicle with a needle, armed with a double thread of silk, and ligated it in two portions. The pedicle was then cut short and dropped back into the cavity occupied by the spleen; so also were the ligatures. Into the cavity occupied by the spleen carbolized sponges were introduced repeatedly until the hæmorrhage was entirely arrested. This was followed by the insertion into the lower angle of the wound of a large size glass drainage-tube, and I proceeded to close the wound with stitches of silk thread, including the peritoneum. After the edges of the wound were carefully approximated and the surface washed with carbolized water, protective gauze was placed over the line of incision and over it a layer of carbolized cotton and antiseptic gauze; and over these a firm snug-fitting flannel bandage; over the mouth of the glass tube, carbolized gauze. The spleen weighed 7 pounds.

The patient was now removed and placed in bed, wrapped in warm blankets and bottles of hot water placed about her. The evidence of shock disappeared in a few hours. The after-treatment consisted in the administration of tonics, stimulants and food, washing out the abscess cavity daily with carbolized water, 1–20, until the removal of the drainage-tube; this occurred on the twelfth day.

On the ninth day the first dressing was removed and union was found to be almost complete; the deep stitches were removed, and the superficial stitches allowed to remain until the fourteenth day.

Her pulse never exceeded 110, and her temperature never exceeded 102°. Her appetite improved rapidly, and her previous bad symptoms disappeared, so that in twenty-one days she was enabled to leave the hospital, and her recovery at the present time is complete.

While dislocations of the spleen are unusual, yet we find cases recorded by Haller, Dessault, Dunglison, Cragie, Riolanses, Wilks and Moxon, and Küchenmeister. Rokitansky, in his "Pathological Anatomy," describes three cases. In the first case he found the spleen upon the right ilium, attached to a twisted pedicle, containing the vessels. In the second it was in the left iliac region, being joined to a long pedicle. M. Kurns related a remarkable case, in which the spleen was mistaken for a strangulated hernia in the left inguinal region; the tumor was the size of the fist, and the splenic vessels formed a large cord leading to the left hypochondriac region.

The cause of these displacements is elongation of the ligaments, and in many of them the spleen has undergone great changes in form, being sometimes thick and round, with the edge ill-defined, increased in size and weight.

Conclusion.—While the weight of surgical authority is decidedly opposed to splenectomy, yet in a case in which the diagnosis is clearly made out, the spleen isolated and suppurating, or lying in a peritoneal abscess and death imminent, I believe, with John Knowlesly Thornton, that where it can be clearly shown that the condition is causing immediate danger to the life of the patient, the attempt to save life by the extirpation of the spleen is justifiable.

FIVE CASES OF LARGE VISIBLE PULSATING ARTERY ON THE POSTERIOR WALL OF THE PHARYNX, WITH REMARKS.

Read at the Meeting of the Section for Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, February 9, 1887.

BY J. W. FARLOW, M.D.,
OF BOSTON.

Case 1.—E. N., a girl 13 years old, came to me at the Boston Dispensary, complaining of nasal catarrh and enlarged cervical glands; she had also an atrophic pharyngitis My attention was immediately drawn to two large, pulsating vessels on the back of the pharynx, about quarter of an inch inside the posterior pillar of the fauces, and lying directly beneath the mucous membrane. By slightly depressing the tongue the lowest point of the pulsation was easily seen, the upper limit was a little higher than the base of the uvula. The vessels were nearly vertical, and the left one had a more marked pulsation than the right. To the finger the impression was given of an artery fully as large as the radial. The patient knew nothing of this condition of her pharynx. Thinking that the large cervical glands might, by pressure, be the cause of this pulsation, I watched carefully to see if the vessels diminished in size as the glands grew smaller. But such was not the case. The glands entirely disappeared and the nose much improved, but the pulsation continued as before. I saw her the other day, eighteen months after her first visit, and found no change in the vessels.

Case 2.—Mary C., 18 years old, came to me complaining of nasal catarrh and some atrophic pharyngitis. There was a large, pulsating vessel on the

posterior wall of the pharynx on the left side, as in Case 1, but none was seen on the right. There were no large cervical glands.

Case 3.—Annie M., 23 years of age, came to me for post-nasal catarrh. On the back of her pharynx were two large, pulsating arteries, almost an exact counterpart of Case 1.

Case 4.—This was a woman about 30 years old, and was seen at the Massachusetts General Hospital, by Drs. F. I. Knight and F. H. Hooper. No notes of the case are at hand, but Dr. Hooper thinks the large vessel was on the back of the pharynx, about halfway between the uvula and the posterior pillar of the fauces on the right side.

Case 5.—A little girl, 4 years old, came to me for nasal catarrh. On the posterior wall of her pharynx on the right side was a large pulsating vessel, as in the other cases. The glands of the neck were slightly enlarged. A sister, 5½ years old, has beginning atrophic pharyngitis and rhinitis, but no artery visible.

All the other cases seen by me were women, and in all the pharynx was atrophic, in two markedly so, the mucous membrane being thin, dry and shining.

This condition must be very rare, for I find no mention of it in text-books or in the literature of the subject. In my service of five years in the throat-room of the Boston Dispensary, I had never met with a case, and yet my three cases were seen within a week or two of each other, as is often the case with rarities.

In regard to what vessels these are, let us look at the normal blood-supply of the pharynx. The pharynx receives its blood principally from the ascending pharyngeal, a branch of the external carotid, and the ascending palatine, a branch of the facial. Cruveilhier[1] says: "The ascending pharyngeal is the smallest branch of the external carotid. Its calibre is in inverse proportion to that of the palatine branch of the facial. I have seen it as large as the occipital. Its pharyngeal branch subdivides at the base of the skull into several branches which penetrate the very dense fibrous tissue at the insertion of the pharynx to the occiput. These then turn downward, and terminate in the walls of the Eustachian tube and the muscles of the pharynx. In a case of absence of the palatine branch of the facial I have seen the pharyngeal branch, very large, supply the tonsil and ramify and lose itself on the veil of the palate."

Sappey[2] says: "The ascending pharyngeal is distinguished from the other branches of the external carotid by its small size and vertical direction."

Gray[3] says: "The largest of the pharyngeal branches of the ascending pharyngeal passes inward, running upon the superior constrictor, and sends ramifications to the soft palate, Eustachian tube and tonsil, which take the place of the ascending branch of the palatine when that vessel is of small size." With regard to the ascending palatine Gray says:[4] "It passes up between the stylo-glossus and stylo-pharyngeus to the outer side of the pharynx. After supplying these muscles, the tonsils and Eustachian tube, it divides near the levator palati into two branches; one follows the course of the tensor palati and supplies the soft palate and palatine glands. The other passes to the tonsil which it supplies, anastomosing with the tonsillar artery. The tonsillar branch passes up alongside of the pharynx and, perforating the superior constrictor, ramifies in the substance of the tonsil and the root of the tongue."

According to the above descriptions it seems as if, in my cases, the vessels were the ascending pharyngeal arteries, from their situation on the superior constrictor and their vertical direction, and, inasmuch as mention is made of the increased size of the vessel when the ascending palatine is small, it is possible that the latter vessels in my cases were unusually small. The atrophy of the mucous membrane allowed the pulsating vessel to be seen more readily.

The surgical importance of these cases is sufficiently apparent. In case it were necessary to make an incision in the back of the pharynx, as in retro-pharyngeal abscess, we see how great the risk of an alarming hæmorrhage might be. In all cases, where possible, it is advisable to examine with the finger before operating, to see whether an artery of abnormal size or situation is present.

Dr. Porter[5] relates a case of recurrent hæmorrhage from behind the left tonsil, which he thought came from the tonsillar artery or from a branch of the ascending pharyngeal; also a case of hæmorrhage from an ulcer on the posterior part of the soft palate, probably from the same vessels.

Dr. E. Carroll Morgan, of Washington, D. C., who has recently written a paper on "Hæmorrhage following Uvulotomy," writes me as follows: "Obstinate bleeding following uvulotomy is, in my opinion, often due to the condition your cases so well illustrate. Literary research has surprised me, I confess, and I have now collected seventeen cases of dangerous hæmmorrhage after this simple operation. Twelve of these have never been published and were obtained by personal letters. Strange as it appears, the possibility of an anomalous artery being a factor in the dangerous hæmorrhages which have followed uvulotomy has never been mentioned in connection with reported instances."

These arteries must also be taken into consideration in cases of surgical treatment of the tonsils. Many cases of hæmorrhage following tonsillotomy are reported. In most of them no mention is made of the finding of an artery of unusual size, but it seems to me that a careful examination would have revealed this condition in some of the hitherto unexplained cases of hæmorrhage.

Downie,[6] speaking of tonsillotomy, says: "Of the vessels in the immediate neighborhood, the ascending pharyngeal is the only one which might be damaged, and this only in unwarrantably free incision into the tonsils, never in excision." Billroth[7] removed the left tonsil of an hysterical lady. The organ was

[1] Anat., vol. iii, p. 86.
[2] Anat. Descrip., vol. ii, p. 575.
[3] Anat., p. 454.
[4] Anat., p. 451.

[5] Trans. Am. Med. Ass'n, 1882, p. 511.
[6] Edinburgh Medical Journal.
[7] Lancet, 1870, vol. ii.

pulled toward the middle line, and a fold of the pharyngeal mucous membrane was probably drawn out and cut with the tonsil. A fearful hæmorrhage occurred, which Billroth thought came from some large branch of the ascending pharyngeal.

In Schmidt's "Jahrbücher," vol. 186, is related a case of severe hæmorrhage after cutting off the left tonsil. Various hæmostatics were tried unsuccessfully, and in three hours the common carotid was tied. In this case the cause of the hæmorrhage was thought to be some abnormal ramification of the vessels.

Other similar cases might be cited, but these will serve to show the importance of bearing in mind the possibility of having to do with a condition such as I have described, and also the need of making a thorough examination before operating on the throat.

A CASE OF EMBOLISM OF THE LEFT VERTEBRAL ARTERY, WITH AUTOPSY.

Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, February 9th, 1887.

BY F. W. STUART, M.D.,
OF BOSTON.

G. W., aged 62, came to the Carney Hospital on December 31, 1885, with the following history: His grandfather, father, two brothers and one sister had died of what he called "softening of the brain," and the account given of the disease, rendered it probable that they had had general paresis. In other respects the family history was negative. The patient considered himself well until three years ago, though he had for years been very corpulent, weighing at one time 250 pounds. In the fall of 1882, he fell and injured his knee, but attached no importance to the injury, though it obliged him to limp about for a time. Soon after he began to have trouble with his eyes and was operated on for cataract at the eye and ear infirmary, where he learned incidentally that he had fractured the patella of the left knee. For the last three years his health had been poor, loss of strength, weight, and appetite being the most prominent symptoms, added to which for the last few months there had been attacks of severe pain in the stomach, and vomiting, which lasted for from twenty four to forty-eight hours and always began at night, when they were also most severe. The patient was positive that the attacks began about midnight, and the ingestion of food seemed to bear no relation to them. The vomitus was as a rule, of a black or dark brown color, and once or twice was distinctly like coffee grounds in appearance. The patient admitted having used alcohol rather freely during his younger days, though for ten years past he had been a total abstainer. When at the hospital he was cachectic and some chronic affection was suspected. Physical examination failed to reveal anything except a decrease in the area of liver dulness. Careful examination of the urine, chemically and microscopically, showed nothing pathological. No diagnosis being made, an expectant treatment was entered upon, under which the patient improved, and ceased visiting the hospital.

On March 10, 1886, during the service of Dr. W. N. Bullard, he reappeared, and a diagnosis of probable cirrhosis of the liver was made. This was his last visit to the hospital, and nothing further was known of his condition until May 17, when I was called to attend him. I then learned that during the interval between March 10 and May 13, no evident change in the patient's condition had taken place, though he had been subject to attacks of dizziness and dyspnœa, so that he desired to have the windows opened, and these attacks had always been accompanied by profuse sweating. He had on that day, March 13, answered the door bell several times, but on returning the last time, he said that he had come near falling, and laid himself on the sofa. He answered several questions put to him by his wife, and nothing further was thought about his condition until an hour later, when it was noticed that he failed to recognize a friend who had entered the room. All attempts to rouse him were in vain, and finally he was put to bed, where after a few hours he became brighter, and it was not until May 17, four days later, that I was sent for. I found the patient lying apparently comatose, though he could be aroused to answer questions, which he did slowly but intelligently. He moved all of his extremities promptly as requested, and continued to repeat the motion, as it were automatically, not even ceasing always when requested to do so. None the less there was distinct paresis. The patient recognized all visitors, and conversed with them intelligently as far as they noticed. It is certain that he recognized them sufficiently to greet them by name, and properly according to their relationship, but a few minutes after they had gone he did not know of their visit, and often asked why they had not called. Difficulty in swallowing, indistinctness of articulation, and incontinence of urine completed the manifest symptoms. When asked if he wished to urinate he would pass considerable quantities of urine at a time, though repeated suggestions failed to relieve the dribbling. There was marked constipation. The patient himself complained only of weakness.

I then called Dr. W. N. Bullard in consultation. The patient's condition was noted to be as above. Physical examination showed the patient to be pale and cachectic in appearance, temperature normal, pulse 80. There was a cataract in the right eye, and iridectomy had been performed on the left, so that both pupils were dilated. The left reacted to light. The reflexes were normal, and no anomaly of sensation could be detected beyond that due to mental obtuseness. Further examination revealed nothing pathological except the small liver. Though the cause of the existing condition was recognized as distinctly cerebral, the exact nature of the lesion could not be determined upon, though a hæmorrhage was considered to be the probable cause of the trouble.

From this time, May 19, until his death, the patient lay in bed in a semicomatose condition, replying to questions intelligently, in spite of some aphasia, which appeared to be ataxic in character, but when

not addressed or otherwise roused, apparently unconscious of his surroundings. There was no aphasia, properly so called, that is he always used the proper word when he spoke at all, although his speech was hesitating and indistinct. The paresis, which nowhere amounted to absolute paralysis, continued unabated. There were no convulsions and the patient gradually sank away, becoming constantly weaker and weaker, and died May 27, ten days after I first saw him.

Autopsy was made May 29, thirty-six hours after death. The body was of medium development, somewhat emaciated. The relations of the cranium to the head, and of the head to the face, were normal. The cranium alone was opened. The bone was normal in thickness, the dura, everywhere strongly adherent, could not be removed except with great difficulty. The longitudinal and transverse sinuses were empty. The pia mater was much injected, the vessels being dark and swollen. There was no fluid in the meshes of or under the pia which was neither adherent nor thickened. The brain was of normal size and consistency, its bloodvessels everywhere dilated and very prominent. They all contained numerous atheromatous patches, yellow, hard, and not contracting on section of the vessel. These patches occupied one-third to one-quarter of the whole extent of the larger arteries from the vertebral upwards. Between these hardened yellow patches the arteries were dark blue and dilated, though little or no blood was found in them. There was no fluid in the lateral ventricles. Puncta cruenta were very few and not well-marked. The choroid plexuses were dilated and enlarged. No signs of hæmorrhage or softening were found in the substance of the cerebrum, cerebellum, pons or medulla oblongata. A grayish body the size of a pea was found at the anterior portion of the falx, there adherent. A small white thrombus was found occluding the left vertebral artery and extending into the basilar, which it partly occluded.

MEDICAL PROGRESS.

Uterine Dyspepsia.—In connection with a case lately observed by himself, Jaffé, of Frankfort-on-Main, calls attention to the affection which Kisch has named *dyspepsia uterina*, meaning thereby a dyspeptic condition that has its origin and cause in a diseased condition of the female sexual organs. Although it is well known to medical men, that during the course of diseases of the female sexual organs there may arise various dyspeptic symptoms, as disordered digestion, eructations and constipation, there has been no clear conception of the significance of these symptoms.

His case was the following: Miss S., æt. 23 years, had been affected two years before coming under Jaffè's observation, with a suspicious apex catarrh. She now sought relief for various nervous complaints, and more especially for an obstinate want of appetite. She had no fever, the color was remarkably pale, the courses were regular, quite painful. Excepting some dulness over the right apex, pointing to the remains of the former trouble, examination of the patient revealed nothing abnormal. Steel and easily digested food was prescribed. Her condition became worse from week to week; the want of appetite increased to a positive dislike for all food; she complained of pyrosis, frequent eructations; now and then she vomited shortly after eating; her bowels moved but once in eight to ten days, and then only after all kinds of purgations. Jaffè diagnosticated a chronic gastro enteric catarrh, as the age of the patient pointed against cancer, and the symptoms against round ulcer.

All treatment by muriatic acid, Carlsbad salts, cocaine, nux vomica and opium being useless, and the eructations and the vomiting continuing to increase, the question, if this was not a case of nervous dyspepsia, came up for consideration. To determine this point the stomach-tube was introduced seven hours after a meal had been taken, according to Leube's directions. The stomach was found empty and free from acid, and hence an organic disease of the gastro mucous membrane could be excluded. The patient now for the first time admitted that she had been troubled for a long time back with pain and heaviness in the lower part of the abdomen, and that she had leucorrhœa, which had grown much worse of late. Hip baths and vaginal injections of carbolic acid solution were added to the previous line of treatment. No improvement followed; on the contrary, the gastric symptoms increased greatly, and vomiting became so severe that no food at all could be retained, so that the patient emaciated to the last possible degree. The case now presented much similarity to obstinate vomiting of pregnancy. She now submitted to a vaginal examination. This was performed with patient under chloroform, and disclosed an enlarged womb, in anteflexion, with virginal cervix, and thick cream-like pus pouring from the os. The ovaries seemed to be normal. The uterus was dilated, and the mucous membrane of the body and neck thoroughly scraped, and then washed out with a three per cent. carbolic acid solution by means of a Fritsch-Bozeman uterine catheter. There was no hæmorrhage, and but slight febrile reaction; paresis of the bladder, however, developed, and necessitated the use of the catheter for several weeks. After this operation the gastric symptoms and the vomiting disappeared as if by magic, appetite and digestion became normal, and the patient gained rapidly in flesh. But with the appearance of the menses there was a partial relapse of the local symptoms, and with them there again came on dyspeptic signs, though of a very mild degree, and without any vomiting. Irrigation of the uterine cavity with carbolic solution always brought relief. There can be no question that the above was a case of uterine dyspepsia, in which the dyspeptic symptoms originated in the diseased condition of the sexual organs. Kisch cites a number of cases in which gastric and digestive complaints of many years standing would yield to energetic gynecological treatment. His two most marked cases are the following:

Mrs. N., æt. 25, was sent to Muricubad for a gas-

tric trouble of four years standing; she has been married six years, and is sterile. Her appetite is good, but after every meal intense gastric pain sets in, with pyrosis and acid eructations; she is obstinately costive, and much troubled with gaseous distension. She has never vomited blood. She has lost flesh and feels depressed in spirits. Neither the lungs nor the digestive organs presented any cause for these violent symptoms. The uterus was found retro-flexed. Kisch replaced the womb, and fortunately it retained its position without a pessary. The digestion, symptoms and the vomiting were at once relieved. Shortly afterwards the woman became pregnant, and carried her child to full term. Since then she has given birth to three children, and has never had any relapse of the old trouble.

The second case showed similar symptoms. An examination disclosed chronic metritis and endometritis, retroflexion, and a small perimetritic exudation on the left side. After proper gynecological treatment had been instituted, all the gastro-intestinal symptoms, for which the patient had for years visited various springs, disappeared completely, and patient gained six pounds in weight during her six weeks stay.

B. Schultze, in speaking of the treatment of chronic endometritis, expresses himself as follows: "Only the practitioner who, in a number of cases of catarrhal disease of the uterus, has washed out the cavity of the womb, after previous dilatation, and has observed how, in consequence of this treatment, long-lasting digestive disorders, dyspepsia of many years standing, are wont to disappear, can form an idea to what evil symptoms, beside the local ones, stagnation of the catarrhal secretions in the uterine cavity may give rise."

What is uterine dyspepsia? By dyspepsia we mean no disease, but only a complexus of symptoms common to many diseases of the stomach, and expressive of an abnormally conducted digestion in the stomach, and such symptoms are a change in appetite, eructations, nausea, vomiting, constipation, oppression and fullness, etc. In uterine dyspepsia this complexus of symptoms arises from an abnormal irritation of the gastric nerves, and this irritation is reflected from the diseased sexual apparatus. The principal effect of the reflected irritation consists in an alteration of the secretion of the stomach, increased acid secretion, in a checking of peristaltic action of the intestines, and in an irritation of the centre of vomiting. Diseases of the womb that are attended with increased size of this organ, and malposition of the uterus, give rise to these symptoms, according to Kisch, chronic metritis, endometritis, myoma, large pelvic exudations, follicular and carcinomatous ulcers and ovarian tumors. Retroflexion is the most common cause. Diseases of the vagina, erosions and ulcers of the os, if of small extent, small peri- and parametritic exudations, do not give rise to dyspeptic symptoms. Jaffè next describes at length the nerve-paths by which reflex irritations are conveyed from the sexual organs to the stomach, to the intestines, and to the centre of vomiting.

Not many physiological data that could throw light on this affection, are known, though Kretschy found, while experimenting with a girl with gastric fistule, that during menstruation the stomach was never free from acid, a neutral reaction was never present, and he had to wait until the cessation of the menses before the cause he had previously found for the acid secretion was resumed. This observation was confirmed by Fleischer, who could demonstrate by the frequent introduction of the stomach tube a distinct slowing of digestion during menstruation.

In Jaffè's own case the dyspeptic symptoms also suffered during menstruation. Though these observations and experiments are incomplete, they seem to show a correlation between the functions of the stomach and the generative organs in woman.

The diagnosis of uterine dyspepsia must often be very difficult, for though digestive disturbances may be present during disease of the sexual organs, still a diagnosis of uterine dyspepsia may not be admissible, as an organic disease of the stomach may be, at the same time, present. Only when an organic disease of the stomach can be positively excluded, would we be justified in making the diagnosis. Frequently it will have to be made *ex juvantibus*. The prognosis of this affection is very uncertain, and depends entirely on the fundamental disease. A non-adherent retroflexion will give a good prognosis, and a carcinomatous infiltration of the womb, a very unfavorable one. The treatment also depends upon the nature of the affection of the generative organs. An energetic local treatment frequently yields an immediate success, as it did in the above case.

In what relation does the affection stand to the nervous dyspepsia of Leube? Clinically they do not differ. Leube finds the nature of nervous dyspepsia in a perverted action of the gastric nerves, and of the entire nervous system, on the processes of digestion. Hence it may originate in all manner of causes of a central and peripheral nature. In this sense *dyspepsia uterine* is a particular form of *nervous dyspepsia*.—*Memorabilien*, 1886, Hft. 4.

Apocynum Cannabinum.—The apocynum cannabinum is a herbacious and perennial plant, belonging to the family of the apocynaceæ. The root contains tannin, resin, and two substances—apocynine and apocynum—having the same properties as digitalis. Dr. Rusch's attention was attracted to this plant by its valuable properties as a hydragogue in arresting serous effusion of the pleura and peritoneum. It is both tonic and diuretic, and is valuable in general anasarca. A decoction is made of 4 grams of the bark to 250 of water, and a dose of 30 grams is given every six hours.—*British Med. Jour.*, March 5, 1887.

Treatment of Blennorrhagia.—Dr. Awssitidjiski records forty cases treated as follows: For four or five days he prescribes a potion containing 5 grams of salicylate of soda in 180 of infusion of linseed. In case the sensation of ardor urinæ disappears, he orders injections of boric acid in two per cent. solution to the number of from 4 to 6 a day for 4 days, ending finally with an injection of bichloride, 1 to 6,000, until the cure is complete.—*União Medica*, October, 1886.

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THE CONDITIONS FOR THE ADMINISTRATION OF NITROGLYCERINE.

In a most interesting paper in the *St. Petersburger Medicinische Wochenschrift*, No. 1, 1887, TRUSSEWITSCH recommends that in prescribing nitroglycerine the terms angioneurosin or aneurosin be substituted for the name which is so objectionable in some cases, since these terms clearly indicate the class of diseases in which the drug has been found most serviceable—diseases in which the vaso motor disturbances constitute the most important substratum.

A deviation of the arterial lumen from the normal vascular tone is a condition *sine qua non* to a successful employment of the drug, the dilating effect of which extends to the arterioles and the capillaries. But while the primary effect of the vaso constrictor nerves is the main indication, another of equal importance is found in the ischæmia, which secondarily follows upon an unequal distribution of the blood either from determination to or dilatation of certain vascular territories. A tonic vaso motor spasm seems to be added to the merely mechanical change in the calibre of the dilated vessels. It would be difficult to explain in any other way the therapeutic action of the drug in certain forms of local congestions to internal organs; for by dilating the remaining somewhat contracted vessels, it draws the blood from the dilated parts, relieves the congestion, and may thus possibly abort inflammatory processes. When, therefore, an irregular distribution of the blood in the vessels is present in disease nitroglycerine is indicated. By suddenly dilating extensive vascular territories it charges with blood parts whose vessels have been in a contracted condition, and relieves other parts in which they have been unduly dilated; thus performing, so to speak, transfusion of blood into an anæmic part, and abstraction of blood from an engorged part. In this way may be explained the action of the drug in megrim and sea-sickness: the contracted cerebral arterioles are dilated, and more blood flows to the brain, being abstracted from the over-distended abdominal vessels. In this way also it relieves the heart-work when contracted peripheral vessels retard the circulation by causing increased arterial pressure. The symptoms, therefore, that point to the selection of nitroglycerine in the treatment of diseases, belong to the sphere of the vaso-motor nerves.

Now, what are these symptoms? The paroxysmal nature of the attacks is characteristic of many of the diseases for which nitroglycerine is useful, this paroxysmal character indicating to a certain extent the absence of organic lesions and the frequent recurrence of exciting causes. Angina pectoris, megrim and neuralgia represent this class of diseases for which the drug is suited. Sea sickness, certain forms of anæmia, fainting fits, palpitatio cordis, etc., are some of the acute angioneuroses for which it may be employed. But nitroglycerine is also used successfully in diseases of a well-marked chronic character, as in Bright's disease, flabby and fatty heart, apoplexy, in which, of course, the treatment must be continued for a long time. In all suitable cases we may expect benefit from it if symptoms of unequal distribution of the blood be present, which are usually shown by pallor, especially of the face, and attended by a weak pulse in a contracted, rigid, deeply-placed radial artery. Trussewitsch makes it a rule to avoid the use of the drug in cases of headache or neuralgia in persons whose faces show the signs of chronic engorgement of the superficial veins; and in asthma, even if it is paroxysmal in character, this remedy is useless if the patient's face be more or less reddened from emphysema. On the other hand, a pale skin during an attack of angina pectoris, megrim, vertigo, shock, toothache, and most forms of sea-sickness, furnishes the best prognosis toward recovery. Dr. O. T. Schultz, of Mt. Vernon, Ind., says that in full-blooded girls of phlegmatic temperament, whose menstrual function has not yet been established, who suffer from constant and long-continued headache of a dull kind, greatly increased by mental or bodily exertion, from vertigo, and whose pulse the least excitement runs up 30 to 40, an alternate flushing and paling of the face does not form a contraindication, for vertigo, headache, and cardiac irritability will yield promptly to the remedy.

But Trussewitsch's observations have taught him

that the equalizing effect of nitroglycerine on the circulation can be utilized in congestive conditions of internal organs; it is in these conditions that the remedy seems to act as a direct abstracter of blood from the vascular system of the congested organ. He considers these observations of especial importance, because we have nothing similar to them in medical literature, and because they raise the hope that in future it may be possible, by means of this agent, to check the progress of acute hyperæmia of an organ, in diseases of this kind, into inflammation, extravasation and other processes. In this way retrogression of acute pulmonary hyperæmia from inhalation of cold air or irritating substances—variously styled acute congestion, engorgement, pulmonary apoplexy—may take place; extravasation of blood into the brain after apoplexy from circulatory disturbances may be prevented; overfilling of parenchymatous organs—especially the kidneys—may be dissipated; violent symptoms of congestion to the heart or brain in climacteric or hæmorrhoidal cases may be lessened; and profuse menstruation may be controlled. It is evident that in this class of cases the congestion must not be a permanent condition, for attention has already been called to the fact that nitroglycerine does not exert any influence when the arterial tone has been permanently lowered by long continued engorgement or passive hyperæmia. Trussewitsch remarks that in these cases of acute congestion he has found, coexistent with the congestion, a remarkably low and slow pulse—a condition which is generally recognized to be present in the non febrile period of acute pulmonary and renal hyperæmia. It is to be hoped that this new indication for the use of nitroglycerine will be confirmed by the further experience.

In the angioneurotic as well as in the congestive forms of disease, good results can be expected from nitroglycerine only if the vaso-motor system of nerves is normally developed, *i. e.*, with normal function of its presiding centre in the medulla and its terminal apparatus in the arterial walls. Before prescribing Trussewitsch examines the pulse, as he considers its character the best guide to the use of the drug and the size of the initial dose. His experience is that the more contracted the radial artery the more rapidly will it become dilated, and the less pronounced will be the secondary effects of the drug; the fuller the pulse with a tense artery the less will nitroglycerine act upon it; and the softer the artery with a weak pulse the greater will be the secondary effects, and the more readily will excessive general symptoms appear. For this reason he dispenses in cases of the first class only the normal dose—1 drop of a 1 per cent. solution, in those of the second two drops after a trial dose of 1 drop, while in those of the third class he begins with a subnormal dose, ¼ to ½ of a drop, so as to avoid the severe drug-symptoms. It is advisable to give women, children, and aged persons smaller doses, and he has made it a rule to give anæmic, weak, nervous, fatigued and frightened persons an initial dose of $\frac{1}{200}$, and to advance to the normal dose only after three to seven days. Organic heart disease is no contraindication. He has given it in cases of angina pectoris with insufficiency of the aortic valves, and dilated aorta, and with flabby, dilated heart without bad effect. Those addicted to the abuse of alcohol seem to suffer more severely from violent and long-lasting headache. In persons who seem not easily impressed by the drug, and to whom, on this account, large doses have been given, this violent headache may not make its appearance for several hours. Caution must be exercised in general atheromatosis of the arteries.

By his trial dose Trussewitsch attempts to find the capacity of the patient for the remedy, and it serves to acquaint the patient with the manner of taking it. In his opinion, the good action of a dose of nitroglycerine is in proportion to the subjective symptoms to which it gives rise. These subjective symptoms are cerebral congestion, dulness, moderate pain, and pulsation, and their onset is an indication that a favorable effect will follow the given dose. The objective sign that the drug will act favorably is a change in the pulse, consisting in an increased frequency, increased duration, and increased softness of the radial artery. If no cerebral symptoms are complained of, and if the pulse does not weaken and become excessively soft, the dose is increased to 2 drops of a 1 per cent. solution. Usually the treatment may be begun with a single drop, and the peculiar physiological effect is experienced even if the medicine be continued for several weeks. In a purely neurotic attack—the symptoms completely disappearing before and after the paroxysms—it is advisable to give 2 drops at once, or else to repeat 1-drop doses every five, fifteen or twenty minutes. To prevent a new attack and to cure the affection the dose is repeated three or four times a day, and an extra dose is given when the premonitory symptoms of the paroxysm are manifested. The fulness, oppression, and pulsation in the head disappear more rapidly if the patient remains seated in a chair, in a well-aired room, and avoids everything that could give rise to a flow of blood to the brain. When the physiological effects of a dose cease to appear, the

time has come when its good effect on the disease has also ceased, and the dose must be increased; only by a single drop, however. Now both objective and subjective drug-symptoms are again promptly manifested, and the disease symptoms again vanish, the patient in a short time learning what to look for, if it should do him good. In diseases of long duration, as in angina pectoris due to organic causes, in which nitroglycerine can only serve as a palliative, great care must be taken in increasing the original dose. It is better in such cases to give an extra drop only just before a paroxysm, and the smaller doses in the intervals, or else to stop the medicine entirely during the latter and only give a full dose before and during an attack. For patients who have become accustomed to nitroglycerine, the dose may be gradually raised even to 10 drops. Trussewitsch has found that if the use of the drug be interrupted for ten or fourteen days, on recommencing the treatment the original, smaller dose will again give rise to pronounced physiological symptoms with their coincident prompt controlling action on the paroxysms; and this peculiarity of the drug makes it unnecessary to unduly increase the dose simply on account of the patient's having become accustomed to the dose.

The best method of administering nitroglycerine, says Trussewitsch, is to drop the dose on the tongue, or to dissolve a chocolate tablet of nitroglycerine in the mouth, so as to bring the medicine into most intimate contact with the mucous membrane of the upper digestive tract. Other methods are unsatisfactory, and that of introducing it into the stomach diluted with water gives the poorest therapeutic results; as little water as possible should be given with it. He is certain that, if given by the stomach, an augmentation of the dose will be much sooner called for and far larger doses will be necessary; and he is not at all surprised that Murrell should have been compelled to rapidly advance to enormous doses in angina pectoris, and that Cantilena, after rapidly raising the dose to 40 drops, should have thrown the drug aside as useless. He can recall no cases in which in a beginner more than 2 or 3 drops, and in one habituated to the medicine more than 5 to 10 drops were necessary to relieve the paroxysm. Dr. Schultz reports that in a case lately under observation 1 drop of a 1 per cent. solution, given with a few drops of water and retained in the mouth, gave rise almost instantaneously to the usual drug-symptoms with violent lightning-like twitches of pain through the brain; while, when the dose was given with water and swallowed, the sharp twitches of pain were absent, and the fulness and throbbing in the head were much milder and appeared much later. When he finds that nitroglycerine does its work, dilates the vessels, and reduces their tension and the blood-pressure in chronic diseases, Trussewitsch is accustomed to gradually advance to the maximum dose, say 10 doses, and then as gradually go back to the original dose. He then interrupts the use of the drug, or drops it altogether. This plan has been found of especial advantage in Bright's disease. He sometimes find it advisable in chronic diseases to combine with the nitroglycerine treatment the use of other drugs, as digitalis in weak, irregular heart-action, cocaine or morphine in neuralgia, and amyl nitrite in violent attacks of angina pectoris, when it is not desirable to augment the dose of the leading remedy. It is of course very necessary to combat any constipation present, and for this purpose uses an aloes and podophyllin pill, or an emulsion of castor-oil with glycerine. A strict dietetic regime is to be insisted on in the treatment of diseases with nitroglycerine; bodily and mental quiet is necessary; change of temperature, excessive exercise, long-continued brain work, mental worry and care must be avoided.

Care must be taken that the preparation of the drug used is a reliable one. The dose should be applied to the tongue by means of a pipette that drops uniformly. The preparation should be kept in a glass-stoppered vial. Many patients always carry a vial of nitroglycerine and a pipette with them, so as to be able to take their dose at a moment's warning. There is no danger of carrying a 1 per cent. or even a 10 per cent. solution, as Trussewitsch has proved by numerous experiments. The preparation does not deteriorate with time, for he has carried the same supply around with him for over four years without noticing any change.

THE DUTY ON FOREIGN BOOKS.

Those members of the medical profession who attempt to keep themselves posted in the advances made outside of our own country, and who are able to read some of the European languages, fully appreciate the injustice (apparent certainly, if not real) of the present high duty on all foreign works. As medical men we are not interested particularly in knowing how such duty protects any home interest; though as a matter of fact the keeping of books in foreign languages out of the country can protect no home interest. Further than this, we must regard at least 95 per cent. of such books purchased by medical men in this country as necessities, not as luxuries. These books are necessities in the same way that agricultural implements are necessities to the

farmer; but all good agricultural implements may be made in this country, while the works of which we speak cannot be made here.

Suppose, for example, a medical man in this country wishes to buy a English, French or German work which costs $1; he must pay 25 cents duty, or at this rate, on a book which costs $20 he must pay $5 duty. How many reading, studying medical men can afford to pay one-fourth more for an article than it is worth? This tax falls exclusively on the reading, studying members of the profession; it does not affect those who do not attempt to make progress after leaving the medical colleges; it does not affect the drones in the profession. We think it will be agreed that such works are as much a necessity for the State at large as for the profession, since it is now well recognized that the highest aim of the profession is preventive medicine. Would it not be well for the American Medical Association to take some action in regard to this matter at its next meeting, and memorialize the General Government, setting forth the injustice of this tax.

COLLECTIVE INVESTIGATION OF DISEASE.

Only a very limited number of the blanks prepared and distributed to members of the profession in this country by the American members of the International Committee for Collective Investigation, organized at Copenhagen, 1884, have been returned as requested, on or before January 1, 1887. The blanks related to rickets, acute rheumatism, chorea, cancer, and urinary calculus. As the time is near when the several members of the Committee are expected to make their returns to the Secretary-General of the International Committee, it is very much desired that all who have received copies of the blanks alluded to and have filled any of them, would return the same without further delay to Dr. N. S. Davis, 65 Randolph Street, Chicago, Ill.

Cholera in South America.—From the Weekly Abstract of Sanitary Reports, from the office of the Supervising Surgeon-General of Marine Hospital Service, dated March 24, we learn that the latest dates from Buenos Ayres, Feb. 5, represent the prevalence of the cholera as decidedly diminishing throughout the Argentine Republic, with a prospect of its early disappearance from that country. But in Santiago and the departments of Aconcagua, Andes and Quillota of Chili the disease continues active and fatal, particularly among the poorer classes of the people.

Died, at Mt. Vernon, Ohio, March 22, 1887, John W. Russell, M.D., one of the oldest and most highly respected physicians of that part of the State. He had been an honored member of the American Medical Association since 1860, and was one of those who crossed the mountains to attend the annual meeting of the Association in San Francisco in 1871. He was born in Caanan, Litchfield Co., Conn., June 28, 1804, acquired a good general education, commenced the study of medicine in 1823, and graduated in the Jefferson Medical Collge in 1827.

Died, at Atlanta, Ill., March 25, 1887, William T. Kirk, M.D., from disease of the heart. Dr. Kirk was well known as an active and honorable member of the profession, and was President of the Illinois State Medical Society at the time of his death. He had been a member of the American Medical Association since 1882; and commanded the respect and esteem of a large circle of friends.

Sir B. Walter Foster, of Birmingham, Eng., President of the Council of the British Medical Association, has been recently elected to the House of Commons for the Western division of Derbyshire. Dr. Foster has previously done good service in Parliament, and we congratulate him on again being honored with a seat in that most important legislative body.

The death of Arthur Farre, M.D., F.R.S., of London, Eng., a celebrated surgeon and writer, and physician extraordinary to the Queen, has just been announced as having taken place in the seventy-seventh year of his age.

The Sanitary Record, London, Eng., for Dec. 15, 1886, contained two important communications concerning the health of London, alluded to by our regular London correspondent in this journal for Feb. 26, 1887.

Professor Borodin, of St. Petersburg, known as a warm supporter of female medical students in Russia, died suddenly of heart disease in February. He was an eminent chemist, and worked out a valuable process for the estimation of nitrogen.

Professor Hirschberg, of the Berlin University, has accepted the Vice-Presidency of the Ophthalmological Section of the Ninth International Medical Congress, to be held in September at Washington.

SOCIETY PROCEEDINGS.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, January 21, 1887.

THE PRESIDENT, CHAS. WARRINGTON EARLE, M.D., IN THE CHAIR.

W. W. JAGGARD, M.D., EDITOR.

DR. CHARLES T. PARKES reported a case of

INTERSTITIAL PREGNANCY, WITH REMOVAL OF THE PRODUCT OF CONCEPTION THROUGH THE UTERINE CAVITY,

with the exhibition of the specimen.

The specimen, which I exhibit to-night, comes from a case, which has been of extreme interest to me, and is, I think, the remains of a conception, which was certainly outside of the uterine cavity, and which I succeeded finally in delivering through the womb. It was taken from a lady, 33 years of age, who, seven years ago, was delivered of a child at full term. The child is now living. A year after that, she was taken with hæmorrhage and had quite a severe bleeding, every month or second month, for two years. Some time after her pregnancy she was operated upon for laceration of the cervix, but the operation had little effect upon the hæmorrhage. Two years ago she again became pregnant, and was delivered at the proper time. This child is still living. The lady came under my charge last September for hæmorrhage from the uterus. On examination, I found a globular mass in the lower portion of the abdomen, as large as two fists, very hard and tense. When I felt it through the abdominal walls, my impression was that it was a fibroid growth. Upon digital examination, I found the cervix dilated sufficiently to admit the finger very readily, which went over the surface of a smooth mass in the uterine cavity. This led me to think that it was a fibroid tumor with a broad base, probably a submucous tumor, which gave rise to the hæmorrhage. On that supposition I placed her on the ergot treatment and kept it up for a week, 20 drops of the fluid extract every six hours. This gave rise to such severe attacks of pain that the patient could not bear the treatment any longer, but it had the effect of diminishing the flow of blood and increasing the dilatation of the cervix. I took pity upon her on account of the pain and gave two hypodermic injections of morphine, when the pain ceased, the cervix began to contract again and soon reached its normal size, and the patient recovered from the acuteness of the disturbance; but the hæmorrhage still continued, accompanied with a flow of muco-pus. I attended her from the 16th of September until the 14th of October; as she was getting along pretty well, I supposed the action of the ergot would gradually force this mass down so that it could be removed.

My visits ceased and I heard nothing more from the patient, except an occasional report that she was getting along in the same way, until the 10th of December, when her husband came into my office and showed me a little piece of bone, or a piece of hard substance that looked like bone, which he said his wife had picked off the napkin. It had the appearance of fetal cranial bone. He asked me what it meant, and I told him I could not say but would see his wife. On inquiry, I found that the flow of blood had ceased, but the flow of pus had increased, and occasionally there was extruded a piece of this bony substance. On digital examination, I discovered the os and cervix filled with particles of this bony substance, and after removing them I found it impossible to introduce my finger into the cervix. The external tumor was reduced considerably in size, and was low down in the pelvis, and could be felt projecting through the anterior vaginal wall. I then decided to dilate the cervix. I introduced as many tupelo tents as I could get into the cervix—at first but two of fair size—to their full length, and allowed them to remain there over night, when I removed them and introduced four more. That evening I removed them, and the cervix was dilated so that I could easily introduce my finger. As I had examined the uterus with the sound at my first visit, and it went around this mass to its full length, I supposed I had nothing but a fibroid to deal with. When I had dilated the cervix with these tupelo tents, I found I could not get at the mass of the growth, my finger going into the cavity of the uterus. At the distance of one joint and a half inside the cervix, I found a little opening, and projecting through this opening—about as large as the end of a pencil—were some of these particles of bone. Then the query arose, how was I to get into this cavity, and what was it? a double uterus, with multiple pregnancy at the last conception—one delivered and the other retained? I was at a loss to know what it was. (But finally concluded it to be an intra-mural pregnancy.) I had the particles examined under the microscope, and they showed the structure of a fetal bone. Then I thought of using the tents, to increase the dilatation, but was troubled with the fear that I should have a severe scepticemia come on as soon as this outside cavity was opened to air. But I was convinced that unless I tried to do something, the patient would pass out of my hands; so I decided to keep on with dilatation. On the 20th of December, I began introducing the tents, and within two or three days after their removal, the cervix was again contracted so that it would not admit the finger. I introduced the tents again, and met the same difficulty in exposing the mass. The thought struck me that if I could not get the large body out of the small opening, I could diminish the size of the mass; so I introduced small forceps into this opening, and took it away piecemeal. All this time I had the entire uterus under my command, because it was an easy matter to bring the cervix down to the vulvar orifice. On the 24th I introduced tents and dilated it, so that I could introduce two fingers very readily, and finally got one of my fingers into the opening in which this body (indicating the specimen) was found. I then began to separate it and pull it away, getting hold of it with strong forceps. Sometimes I succeeded in bringing away a large mass of flesh, which

looked exactly like that from a macerated fœtus, the skin macerated and parchment like. This was continued up to the 30th. Passing over the New Year, and allowing the patient to rest without interference, on January 9, I introduced four tupelo tents, a little longer than the ordinary, and fortunately succeeded in getting one or two into the opening in which the body was found; so when I removed them that evening, I was enabled to bring away the entire mass and pass the finger into the cavity afterwards. It was very irregular, as though the uterine tissues had been forced into the irregularities of the foreign body. Since that time the patient has improved, the bleeding has ceased, the uterus has diminished in size, and she is up and about the house. I have had all parts of this specimen examined under the microscope. The fleshy mass shows connective tissue, muscular fibres, blood-vessels and hairs. The osseous material shows all the characteristics of fœtal bone.

The President, asked if there was a history that would lead one to suppose that at any time during her invalidism there was a pregnancy, or a pelvic hematocele, or anything of that kind?

Dr. Parkes said, that at the time of her last pregnancy, she was very large and yet was delivered of a child that weighed but six pounds. Her abdomen was very large for some time after the delivery of this child. Again, there is a history several years back, of a period when menstruation ceased, and she supposed she was pregnant, but nothing came of it.

Dr. W. W. Jaggard said that the interesting specimen presented by Dr. Parkes was a typical lithopædion—a calcareous capsule, containing the fœtal structures infiltrated with lime salts. He thought the diagnosis of interstitial pregnancy highly probable. It was impossible to make a positive diagnosis without a post-mortem examination of the maternal organs. Carl Braun (*Lehrb. d. g. Gynäk*, 1881, p. 128) was responsible for the statement that the formation of a lithopædion occurred only in case of extra uterine pregnancy. Spiegelberg (*Lehrb. d. Geburtshülfe*, 1882, p. 342) however, indicates that this proposition is too general. The formation of a *uterine lithopædion* occurs infrequently in the human female, but is not unusual in ewes. Kœberlé (*Gaz. Hebd.*, No. 34, 1866) extracted by abdominal section a lithopædion from the rudimentary horn of a *uterus bicornis*. The formation of a lithopædion, therefore, was not a reliable sign in the differential diagnosis between uterine and extra-uterine pregnancy.

Dr. John Bartlett read a paper on

DYSTOCIA; A CASE OF MALPOSITION OF CORD.

Recently I was requested to assist a younger physician in a case of midwifery. Dr. H. had been called some hours before my coming. He found a healthy, well-built woman in labor with her eighth child, hitherto she had had no difficulty in her confinements. She had been in labor some hours, and, although the pains were very strong, the os fully dilated, and the head presenting, no progress had been made. A midwife had been in attendance. The doctor attempted to use Elliot's forceps, but, because of the high and abnormal position of the head above the pelvic brim, he had desisted from his purpose. Upon examination, I found the os widely dilated, the crown of the head presenting. By introducing the hand into the vagina, my fingers directed toward the left sacro-iliac synchondrosis, encountered and passed slightly beyond an extremity of the head ovoid which I supposed to be the occipital protuberance, but near it was so distinct a fontanelle as to lead me to examine the opposite extremity of the head. Passing the hand deeply behind the left foramen ovale and well above the pubes, the fingers embraced the occiput; sweeping well backward again over the side of the head they traversed the temporal region till the ear was reached and carefully outlined. Still further backward the fingers passed over the frontal eminences which had at first been mistaken for the occipital protuberance. The head was floating above the pelvic brim; the frontal region sinking somewhat below the plane of the superior strait. The crown of the head rested gently upon the pubes, while the occiput rested so far forward over the pubic bones as to be distinctly appreciable to sight and touch from without. Having determined the position of the head, I proceeded to inquire the cause of its detention; for it did not impinge with force upon any portion of the circumference of the brim. Passing the fingers along the side of the head I felt for the cord around the neck. A coil of cord was immediately encountered, and pressing a little farther upward a second, third and fourth coil were detected. I felt authorized to announce to Dr. H., as the cause of the dystocia, the suspension of the head above the brim by the cord shortened by four coils about the neck. The fingers were passed about the occiput and it was pressed downward and backward, throwing the forehead backward and upward above the brim and bringing the occiput slightly into the pelvis, the pains meanwhile having a decided effect in assisting the manœuvre. I now intended to seize the occiput with the vectis, and so deliver. Upon trial with the fingers, however, I appreciated that, as the occiput had descended into the pelvis, the forehead had risen above it, so that the power of the vectis as a tractor would not be available, seeing that the forehead, the opposite end of the lever I proposed to move, was not fixed but floating, the fœtus yet resting with the equators of the head well above the brim. As a lever to keep the occiput in proper relation to the inlet, the "Roonhuysen" would have served admirably; but in order to make available traction upon the head it would be necessary to lay hold of it with the forceps. Accordingly, with very little trouble, though locking was effected within the vagina, the head was seized with a well-curved Simpson's forceps, and readily brought down. The expectation was, as soon as the head was delivered, to place quickly two clamp forceps on the cord and cut it between these, in order to escape the embarrassment which the several coils about the neck might occasion. The first loop, however, was easily drawn over the head, the other coils were then readily released. The child which weighed eleven pounds

breathed at once, seeming but little affected by the unnatural position of the funis. The length of the cord was forty-six inches.

In connection with this case, I propose to make some comments upon the mode of determining the position of the head in labor. From time immemorial, it has been the custom of teachers to describe with particularity how the position of the head may be determined by the tips of the fingers by means of the sutures and fontanelles. Whatever skill or tact others may be endowed with, or may have acquired in such methods, for myself I wish emphatically to declare that such examinations are often entirely insufficient to furnish me with the desired formation; and that now, after years of careful observation, I am not unfrequently at a loss to determine the position of the head after the usual examination *per vaginam*, and that I am occasionally led into an error in this regard only to be dissipated by the birth of the head. Nor am I alone in this want of capacity; a number of experienced obstetricians, with whom I have conversed on this subject, have expressed like uncertainty in determining the position of the head by the means mentioned.

How, in cases requiring a knowledge of the head's position, is such information to be obtained? I know no better way of answering this question than by making reference to the practice of Smellie. Please note the thorough methods by which he satisfied himself of the size or position of the head in the several cases here cited. "I knew the child was small because I passed my finger all around the head." And, "I perceived that the head was not large, because I could easily introduce my finger all around the lower part of it." Desiring to ascertain the position he says, "I scooped up the head above the brim of the pelvis, and as I slipped my hand flattened between the sacrum and the child's head, I felt with my fingers on the back part of the neck" (determining the position of the occiput). And again, "I turned the back of my hand down towards the sacrum and raised or scooped the head gently to the upper part of the pelvis; and now with my fingers I felt the posterior part of the neck, and distinguished that the pelvis was not distorted. Thus informed, I introduced the blade of the forceps, etc. In reference to another case he says, "Being foiled in delivering the head, which was not large, after having properly applied the forceps I disengaged the instrument, and raising the head again (out of the pelvis) and found the difficulty was owing to the left shoulder being over the pubes. I got hold of the arm, brought it down, and again fixed the forceps and delivered, pulling gently at the hand." From these extracts it will be seen that Dr. Smellie did not content himself with vaguely touching such portions of the presenting part as might be reached by the introduction of one or two fingers, but that he introduced deeply the half-hand, or the whole hand, and passed the fingers into every available space; not hesitating, when necessary and practicable to lift the head above the brim that he might get his fingers about its salient points as the ear, the face, the back of the neck. It is noteworthy that it is only when circumstances prevent the head being thus "traced," that Smellie recommends that "the observation" be taken from the fontanelles and sutures. In the case which is the basis of this paper, the vaginal examination was made after Smellie's method. The steps of the procedure have been given in detail with the purpose of illustrating his teachings.

Dr. Philip Adolphus said: The diagnosis of the position of the child in head presentations by means of sutures and fontanelles is not as difficult to the physician, who has been in attendance during a case of labor as has been stated this evening. The gradual descent of the head into the pelvis will permit the recognition of the landmarks by *repeated* examination with the finger. In diagnostic obstetric investigations, palpation of the abdomen, the examination of the child's head and the pelvis of the mother by bi-manual palpation, should be conducted on the same principles as in gynecological cases. An empty bladder is also essential to a successful diagnosis. Such an examination will insure the recognition of the position of the child's head, and other necessary information. The consulting physician, who encounters a tender abdomen, tumified soft parts and a swelled scalp in an exhausted patient, has a far more difficult task. The same rules, together with the introduction of the hand as far up as is required, under anæsthesia, will give him the necessary information.

A refinement of diagnosis is not absolutely essential. Many cases of labor are completed, in which the diagnosis of the position of the head has not been ascertained by its sutures and fontanelles. Moreover, cases which require delivery by forceps are frequently skilfully handled when the operator has not been enabled to ascertain the position of the head. We explain this by stating that the mechanical adaptation of the child's head to the bones of the pelvis is perfect; sooner or later the child's head, if *not disproportionate in size to the pelvis*, will accommodate itself to its configuration, provided other obstacles in its path have been removed by the attendant. We state, also, that the position of the head does not determine the position of the blades of the forceps, but the position of the blades is always determined by the anatomy of the mother. Therefore, the forceps should be applied along the sides of the pelvis, and its pelvic cures should correspond to the curved axis of the pelvis. Its introduction is governed by the direction of the obstetric canal, the globular head of the child, and the cranial and pelvic curves of the instrument. The direction of the obstetric canal in a woman in labor is not the osseous pelvis merely; but the pelvis covered with soft parts, whose terminal outlet is not at the point of the coccyx, but at the anterior commissure of a greatly distended perineum, a distance of ten to twelve inches during labor. The blade of a long doubled curved forceps—having both the cephalic and the pelvic curves—is guided into the pelvis by the fingers and insinuates itself between the head and the soft parts of the mother. To facilitate the introduction of the second blade the first blade is

gently elevated and rotated as much in a lateral direction as possible. The same manipulation is repeated with the second blade. In many cases the elevation of the blades and their gradual rotations for the purpose of locking them, adjust the blades of the forceps to the head of the fœtus, as they have already adjusted themselves to the mother's pelvis; and now traction, some compression, and slight leverage (if necessary) complete the delivery of the child, *which will rotate spontaneously within its blades* during traction, owing to the anterior and posterior planes on either side of the cavity, and the resistance of the floor of the pelvis.

It is best that the exact position of the head should be known, but such knowledge is not essential to its safe extraction; on the contrary, it is not correct to apply the forceps to the sides of the fœtal head when its position is oblique or transverse, for if its pelvic curves are twisted, injury must be inflicted on the mother.

Dr. W. W. Jaggard wished to make one or two criticisms. The diagnosis of dystocia, by reason of a short cord, is not adequately established by the clinical history of the case. The ease with which the vertex engaged, after manipulation, and descended, after application of the forceps, the absolute length of the cord, forty-six inches—even with four loose coils around the neck, not relatively short—the condition of the child when born, these are facts which do not indicate that the length of the cord constituted a mechanical hindrance to the progress of labor. The author has quoted Spiegelberg, who is of the opinion that shortness of the cord constitutes a mechanical hindrance only where the presenting part reaches the lower portion of the parturient canal. The only method of determining with certainty, in the concrete case, that shortness of the cord is acting as a mechanical obstacle, consists in the introduction of the fingers, direct contact with the cord, and the detection of the abnormal tension. If the case related by Bartlett was one of dystocia, and if the "occiput projected so far forward over the pubic bones as to be distinctly appreciable to sight and touch from without," does it not seem a plausible hypothesis that the child was presenting slightly obliquely, and that the operator performed cephalic version? "The fingers were passed about the occiput and it was pressed downward and backward, throwing the forehead backward and upward above the brim, and bringing the occiput slightly into the pelvis, the pains meanwhile having a decided effect in assisting the manœuvre."

In treating of obstetrical diagnosis, in general, Dr. Bartlett does not mention the signs derived from inspection, auscultation, and particularly *abdominal palpation*. I am induced to call attention to this topic for the reason that, notwithstanding the writings of Kucher, Mundé, Richardson, the recognition of the value of abdominal palpation in obstetrical diagnosis in the best recent text books, and the translation of Pinard's Treatise, by Dr. L. E. Neal, of Baltimore, still many practitioners affect to disregard the paramount importance of the method. Litzmann (1865), Halbertsma (1870), Winckel (1878), Credé (*Gesunde und kranke Wöchnerinnen*, Leipsig, 1886, p. 80. *et seq.*, in order to prevent the infection of parturient women in their respective lying-in hospitals, having omitted all examinations *per vaginam* for months at a time, with most gratifying results. Under these conditions, external examinations has proved perfectly adequate in the diagnosis of presentation and position.

I confess to a feeling of decided surprise upon hearing that a medical man, with the average degree of tactile sensibility and even moderate experience, should necessarily have difficulty in the diagnosis of position, by indagation, in normal, vertex presentations, after engagement, before the formation of the *caput succedaneum*—the *os externum* being dilated or dilatable, the bags of water, intact or ruptured. I am under the impression that failure to make an accurate diagnosis, by examination *per vaginam*, under the conditions specified, is due in very many cases to inattention. It is an obstetrical maxim of importance that both fontanelles and their sutures should be felt before making a diagnosis, when vaginal touch is exclusively employed. When an extensive *caput succedaneum* has formed, or ossification of the fœtal skull is advanced, or in case of subnormal tactile sensibility on the part of the accoucheur, no absolute contra-indication to the introduction of the half-hand exists. In forceps cases, a correct diagnosis of the position of the vertex must be made, since that instrument ought to be applied first with reference to the pelvic walls, and then adapted to the child's head, before the exercise of its most important—and as I believe, exclusive—function of traction.

Dr. Edward Warren Sawyer: I wish to speak of an interesting experience. A gentleman who had carefully translated the book alluded to called me in consultation to assist him. He had, by means of bimanual palpation, diagnosticated a presentation of the vertex, but on my examination I found the buttocks were presenting. I think in most cases abdominal palpation is of no service whatever to the majority of practitioners. I have experienced the same difficulty that Bartlett has so graphically described in recognizing the position of the head by the introduction of the finger into the vagina. And after a long practice, so uncertain am I concerning the position that I never think of applying forceps until I have introduced enough of my hand to recognize some part of the face or head, in order to determine the exact position of the head.

Dr. J. Suydam Knox said: In regard to making an exact diagnosis of vertex positions, I must often confess failure if I rely only on digital touch. I have no doubt if the practitioner is called early to a case of labor before the uterus has become contracted, and the bag of waters has been ruptured, that it is possible by abdominal palpation to make out the position of the fœtus. When, however, labor has gone on for several hours the uterus becomes irritable, contraction and retraction taken place, and the liquor amnii to some extent discharged, I am satisfied that it is often impossible to make out a diagnosis of the position of the fœtus by digital

examination. Even if you can determine that the vertex is presenting, you cannot then make out the position exactly. I have no doubt that Dr. Jaggard is correct about those large obstetrical hospitals in Europe. The diagnosis is made because the patient is under observation from the time labor begins. But the busy practitioner is called after labor has progressed some hours, and the uterus is so irritable that as soon as he begins to make any abdominal examination it contracts, and it is impossible easily to make a diagnosis. I do not introduce the hand into the vagina in many cases, but when the labor is protracted, and I think the use of forceps necessary, and I cannot make out the exact position of the head, I give the patient an anæsthetic, and introduce the hand sufficiently to find out how the head lies. I cannot see how sepsis can occur by the introduction of that portion of the hand necessary to make a diagnosis, and I think the diagnosis should be made before instruments are applied. I have several times tried the oblique introduction of the long forceps, but doubt the wisdom of introducing them obliquely without reference to the shape of the mother's pelvis and attempting traction. It is much better to apply the forceps to bring down the head, with reference only to the maternal passages, and when the head has been brought through the superior strait, to unlock the forceps and allow rotation before effecting delivery. At times it is better to remove the forceps entirely, and to re-apply them after rotation has occurred.

Dr. De Laskie Miller was much interested in the paper. It is true that there were many statements that seemed strange. The paper was on the treatment of complications resulting from short cord, and the illustration was a case in which the cord was forty-seven inches long with only four coils around the neck. This should not, it seems to me, be a cause of dystocia; but admitting that it was, we come to cases of actually short cord causing dystocia. Take a cord that measures only four inches in length, or a case of labor which has occurred in which there is no cord, of course there must be a placenta, and the fœtus is attached through this directly to the wall of the uterus. In such a case how can delivery take place without applying traction force sufficient to sever the placenta? Physiologically the contraction of the uterus, especially after dilation is completed, is attended with a muscular retraction of the fibers of the body and fundus, which diminishes the cavity of the uterus and has the effect of severing its relation with the placenta. It is therefore possible for the placenta to be severed from its attachment to the uterus, by this retraction, and moreover there can be no injury to the uterus from the short cord if the contractions are normal, for while the organ is contracted the relation between the attachment of the cord and the uterus, or the placenta and its attachment to the fœtus, is not extended, rather shortened, so that the advance of the child can take place and delivery result.

A case is recalled which occurred in my own practice, of a primipara who was perfectly healthy, with nothing abnormal until about the time labor commenced. When I saw the patient in the first stage of labor, she remarked that she had felt no movement of the child for a considerable time, but this produced no impression on my mind, for it is a common thing for patients to say, and I paid no attention to it. The labor proceeded, and as the head was expelled from the vulva, I did as I always do, pass the finger instantly to the neck with the view of searching for the cord, and if it is found there liberate it. I found two or three coils of the cord around the neck, and they were so tightly drawn that it was impossible to disengage them. In order to deliver the child readily, I severed the cord. I noticed there was no circulation, and the child was still-born, past all possibility of resuscitation, and it had been dead a long time, for I found a knot in the cord drawn so tightly that the circulation was entirely cut off. In addition to the coils around the neck the cord passed over the shoulder, under the opposite arm, around the body and under the knee, possibly there were other coils. It appeared very much like the statue we see of Laócoön. I infer that the movements of fœtus at the time labor commenced or shortly before had tightened the cord, causing its death. This is the only case I have met in my practice in which I could satisfactorily trace the death to the closing of the knot. In regard to diagnosis of position, I was not aware that it is so difficult to make the diagnosis of position. I believe the practitioner should make out a diagnosis by abdominal palpation, which can be done with great facility if he is accustomed to the practice; but I also believe that the diagnosis can be made with one fontanelle and the sutures. We can certainly discriminate between the anterior and posterior fontanelles.

Dr. Bartlett said: A fellow has expressed surprise that as a means of diagnosis I have not made reference to abdominal palpation. I purposely limited my remarks to the ordinary methods of vaginal examination. I may, however, give it as my opinion that the method of determining the position of the head by abdominal palpation will probably prove available to those only who are capable of diagnosing head positions by the ordinary examinations per vaginam.

Drs. Jaggard and Miller have called in question the assigned cause of dystocia. To them it does not seem probable that the shortened cord was the cause of delay. Their objections are well taken. In this case there are two facts which give rise to the question whether the cause of the dystocia was really the shortening of the cord, the one in itself offering at first glance a sufficient cause for delayed labor, viz., that the head was projecting decidedly forward over the pubic bones; the other seeming to guarantee freedom from restraining tension on the part of the cord, namely, its unusual length; so that after delivery of the head the funis, though shortened, was not too tense to admit of its coils being released in the usual way. It must be considered, in reference to the abnormal position of the head at the superior strait, that while its attitude presented an impediment to the descent of the occiput, it invited a facile descent of the forehead; and yet this descent did not occur.

Besides, the head could be swayed to and fro in the median plane of the occipito frontal diameter so easily and freely as to give the impression that it swung on a pivot at the neck. In fact, it was this sensation imparted to the hand that suggested the probable suspension of the child by the cord; and this suggestion was strengthened by the apparent absence of any natural tendency of the head to settle into the excavation, either in the first instance as a brow and face presentation, or subsequently, as a right occipito-anterior position.

In regard to absence of great tension of the cord after the birth of the head, it is to be considered that without calling in question the possible detachment of the after-birth, surging of the coils about the neck, etc., the well-known mechanical principles by which the attached placenta in such cases in some measure keeps pace, so to speak, with the descending head, so clearly described by Dr. Miller just now, may themselves offer an answer to the objection that the cord was not found more tense after the head was delivered.' No argument, however, can place the case certainly within the category of those which dystocia is due to shortening of the cord. It will be perceived that I have regarded the case as interesting rather than because of the unusual diagnosis of the malposition of the funis than as one in which this abnormity produced dystocia; and that I have availed myself of the free exploration of the presenting part by which the diagnosis was made an opportunity to present what I regard as the more important part of this paper. I refer to my views as to the insufficiency of ordinary vaginal examinations as means of determining presentations and positions in labor. Upon the discovery of the four coils of cord about the neck, in association with other circumstances and conditions mentioned, I conceived the circling of the funis to be the cause of the dystocia, and conducted the delivery in accordance with that idea.

Criticisms on the plan adopted should be made in this case, as in others, from the ante-partum standpoint of information. They should not be based, for instance, upon the knowledge that the cord was of very unusual length. This surplus in the cord's length threw a new and unexpected light upon the case, casting difficulties, before prominent in the foreground, into shade, and causing possibilities not before visible distinctly to appear. In this new light an opinion might be formed that the case left to nature would have terminated well, and that all interference was unnecessary. And yet I incline to the opinion that the ante-partum view of the case through the dark glass of the clinical obstetrician was the correct one.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

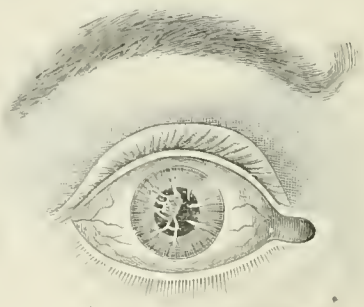
Stated Meeting, February 23, 1887.

The President, J. Solis-Cohen, M.D., in the Chair.

Dr. Charles S. Turnbull exhibited a patient presenting a

PERSISTENT PUPILLARY MEMBRANE.

I have brought before you to night a case of unusual interest to ophthalmologists and to medical men in general. The patient has in his right eye what is known as a "persistent pupillary membrane." This is a remnant of fœtal life, but its exact structure has not been ascertained. Some consider it to be made up of atrophied blood vessels, which have served their purpose. Other authorities hold that it consists of the remains of connective tissue through which blood-vessels pass. In this man's right eye there is a network of hair-like fibres occupying the outer half of the pupil. These fibres originate from the anterior surface of the iris, and interfere in no way with the constrictor muscle of the pupil. This form of congenital anomaly was first observed about 1735, and on an average about one case has been reported every five years since that time. I am indebted to Dr. P. H. Bailhache, of the U. S. Marine Hospital Service, for the opportunity of exhibiting this patient.



Dr. E. Jackson said: This case is notable for the clearness with which it shows the relation between the membrane and the iris. In all the cases I have seen heretofore, as in this, the pupillary membrane has seemed to arise from the anterior surface of the iris; but in no other instance has the connection been so obvious, the membrane here appearing to be simply an extension of the anterior layer of the iris; and similar to it in structure.

Dr. Turnbull said that the point referred to by Dr. Jackson is well illustrated in this case, and it settles the disputed question as regards the origin of these fibres. It is distinctly seen that the sphincter muscle is in no way involved. The membrane has no connection with the muscle nor with the inner pupillary margin.

Stated Meeting, March 9, 1887.

The President in the Chair.

Dr. J. Solis-Cohen read a paper on

ADMINISTRATION OF GASEOUS ENEMATA.

He desired to exhibit Morel's apparatus for administering gaseous rectal injections, according to the method of Professor Bergeon,[1] in diseases of the

[1] For details, see Nouveau Traitment des affections des Voies respiratoires et des intoxications du sang par les injections rectales gazeuses, d'apres la méthode du Dr. L. Bergeon. Par V. Morel. Paris, 1886.

respiratory passages, and in blood-poisoning; but as it had not been forwarded from the Custom House, he exhibited a substitute made in imitation. The object in view is to supply to the venous circulation an antiseptic, such as sulphuretted hydrogen, in sufficient doses to be effective; a result impossible when supplied directly to the arterial current, a plan which would poison the patient. Sulphuretted hydrogen inhaled in far less than sufficient doses would suffocate the patient; taken by the stomach, it would produce other serious results. Administered by the bowels, however, and entering the venous current already deteriorated by organic refuse, it is quickly eliminated by the respiratory tract, which thus becomes subjected to its beneficial local antiseptic effects without subjecting the system at large to injury, as when thrown into the arterial current. In other words, the parasite is killed, without killing the individual.

Its beneficial effects in phthisis are explained by the action of the gas on the suppurative and septic surfaces, and not by any influence on the bacillus tuberculosis; the consumption proper, the exhaustion, being due to the suppuration and to the consequent septicæmia, and not immediately to the bacillus, which, while it produces the destruction of tissue, does not produce the morbid phenomena. The method of administration utilizes the discovery announced by Bernard in 1857, that toxic materials introduced into the economy through an organ at a distance from the arterial system could not penetrate into the arterial system because it is eliminated before that system can be reached. Volatile sub stances are eliminated by the pulmonary alveoli.

The antiseptic substance employed is preferably sulphuretted hydrogen. This is propelled by means of a current of carbonic acid. It is important that the carbonic acid be freshly made, and that the injection be made without any admixture of atmospheric air, the presence of which will cause griping. The carbonic acid gas as evolved from the action of the dilute sulphuric acid upon sodium carbonate is collected in a rubber bag previously emptied of air by rolling it. This bag is then connected with a hand-ball compresser, by means of which the gas is propelled through natural sulphurous water in a sort of Wolfe bottle, driving off the sulphurous gas with it through a tube, the terminal extremity of which has been passed into the rectum. Within less than a minute the escape of the gas by the lungs can be detected in the breath.

The beneficial results obtained in pulmonary phthisis by Dr. Bergèon, and reported last July to the Académie des Sciences, have been confirmed by Professor Cornil, in a communication last October, to the Académie de Médecine, by numbers of French physicians, and by Dr. Hughes Bennett, of Mentone. Bergeon stated that the patients he considered practically cured, had no more expectoration, and only dry auscultatory signs of cicatrizing cavities, or other cicatricial results of old lesions. Some of them had become able to resume tolerable laborious employment, with full maintenance of the amelioration they had acquired. In most patients, it is said, there is a marked diminution of cough, expectoration and night sweats within two or three days. Nevertheless, the trifling expectorations of those apparently practically cured, continued to contain bacilli. This fact may be taken both for an indication that the immediate danger in phthisis is less from the bacilli than from the septicæmia which they set up, and as an indication that this protective treatment, when successful, should not be discontinued until the general healthiness of the tissues is sufficiently restored to resist the further development and sustenance of the bacillus tuberculosis.

Dr. William Osler said, that recently at the University Hospital, a patient very nearly expired after an injection of a mixture of carbon dioxide and sulphuretted hydrogen. He was not aware at the time that sulphuretted hydrogen, if given in sufficient quantities, is capable of producing poisonous effects even when taken by the rectum. This accident was mentioned lest similar mistakes may arise. Evidently the amount of sulphuretted hydrogen which is given must be small. At the Biological Society, at Paris, some experiments were related, which showed that even a few cubic centimetres are sufficient to poison a good-sized dog. In the experiences which are related in French journals, the odor of sulphuretted hydrogen is readily observed in the breath, but this has not been noticed in any of the Blockley patients. This is an exceedingly interesting, not to say comical, method of treating phthisis, but it is too early to say what the results are likely to be. Certainly, however, in Dr. Bruen's hands, at the Philadelphia Hospital, they have been extremely good.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, March 7, 1887.

The President, Edmund J. Doering, M.D., in the Chair.

Dr. Franklin H. Martin read a paper entitled

HYSTERO NEURASTHENIA, OR NERVOUS EXHAUSTION OF WOMEN.

(See page 365.)

Dr. J. G. Kiernan said: I might quarrel a little with the name adopted, as a somewhat useless addition to disease nomenclature; for it seems to me that most of the symptoms given are not characteristic of any particular disease other than the common form of nervous prostration occurring in women. Most of the symptoms given as regards the vagina, uterus, etc., are such as we would expect to find secondary to nervous exhaustion in females. Dr. Martin has not outlined the difference between a condition of neurasthenia, which occurs in a female of previously sound constitution both from heredity and other standpoints, and the condition of the woman whose ancestors have been the victims of neurosis or hereditary disease, or who has acquired a neurotic constitution. In the first of these forms a great deal can be done by combating the exhaustion, and no better system can be given than that which has been

outlined by Dr. Martin. In the last type this treatment is worse than useless. I remember that a number of patients whom S. Weir Mitchell had treated afterwards came to the private insane hospital to which I was at one time physician. With this class of patients the trouble is with the brain, and in most it is congenital. In them the *ego* is of superlative development; they are perfectly willing to be petted and fussed over, but that simply tends to develop the egotism in certain directions. In this class of cases massage is peculiarly noxious, since in many of them there is a sexual element which is likely to be increased by massage, as has been pointed out by Murrell and others. In regard to medicinal treatment, Dr. Martin has not indicated the danger of inducing habits in some of these cases by the prescription of morphine and alcohol, as Dr. Mary H. Thompson some years ago pointed out in this Society. Many a neurasthenic person has become the regular inmate of an inebriate asylum or home for opium habitues, because some physician has prescribed opium or alcohol for the treatment of insomnia.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, February 9, 1887.

The President, Jos. Taber Johnson, M.D., in the Chair.

Dr. H. D. Fry read a paper entitled,

THE VALUE OF THE ANTISEPTIC METHOD IN OBSTETRIC PRACTICE AND ITS APPLICATION TO THE FORCEPS OPERATION,

and exhibited Breus' modification of Tarnier's forceps. He spoke of the advances which had been made in recent years in the practice of obstetrics, and of the reduction of childbed mortality that had followed these improvements. He directed attention more particularly to the germ theory of disease in relation to the pathogenesis of puerperal fever, and to the adoption of antiseptic precautions for the prevention of the affection. The brilliant result that had followed the application of this line of treatment in maternity institutions was mentioned, and the antiseptic precautions demanded in the forceps operation were then dwelt upon. These precautions differ but little in detail for the various obstetrical operations, and those applicable to this one may be employed for others when modified by changes to meet the exigencies of particular cases.

The objects sought are three fold:

1. Preventing the transport of germs to the genital canal of the woman.

2. Killing those which elude our vigilance, and

3. Limiting the production of traumatic injuries as much as possible.

Dr. Fry then applied these principles to the forceps operation, and stated the rules to be observed in such practice.

Dr. S. C. Busey asked Dr. Fry if he had any statistics showing the relative proportion of cases of puerperal fever following the use of forceps and without their use.

Dr. L. Mackall asked how long Dr. Fry had been using antiseptics, and with what result?

Dr. Fry replied to Dr. Busey, that he had no such statistics, and to Dr. Mackall, that he had been using them two and one-half years and with the most gratifying results. During the first year he used antiseptics only on every other case of midwifery. He, however, visited all his obstetric cases once, sometimes twice a day, and took the temperature and other notes at each visit. At the end of the year he compared notes, and found that the average temperature in the cases in which antiseptics had been used, was lower than in the others; in fact, the cases had not had the usual rise, the so-called "milk fever," and they had in every way a much better "getting up." In forceps cases, even with a lacerated perineum, there was usually no rise of temperature above 100°. In but a single case has he seen, in two years, "milk fever," and that was when he had forgotten to bring his tablets with him. He did what he could in the way of washing his hands, but the temperature reached 102 on the second day.

In reply to Dr. T. C. Smith as to what he thought the mortality of private obstetric practice ought to be, Dr. Fry replied, about 25 per cent.

Dr. T. C. Smith, quoting from the Health Report of Washington, for the year ending June 30, 1885, said that twenty-nine deaths were put down to puerperal fever. There were also 3334 births reported, which makes the mortality less than .9 per cent. The births probably reached 4,000, as all of them are never reported, which makes the per cent. even lower. The twenty-nine deaths were from various causes, all being put down under the general term "puerperal fever." When we recollect that a large majority of the births are in charge of midwives and in colored women in the worst possible hygienic surroundings, is there any wonder that there should be twenty-nine fatal cases? Moreover there were 393 illegitimate children and 391 stillbirths, both conditions bearing directly upon maternal mortality. Are there not sufficient causes to indicate that something besides "germs" kill? He said that he never had a serious case of puerperal fever after the use of forceps. He recalled one case of a primipara whom he delivered with forceps, and in ten days she was well.

At her next labor, he arrived too late to be of assistance and she was six weeks in getting up. Another woman he had delivered three times with forceps, but on the fourth he used neither ether nor forceps, and both he and she were sorry for it. He mentioned two other cases in which he had used the forceps, in spite of torn perineums, both made a rapid recovery.

He thought that douches during labor remove the mucus, the natural lubricant of the vagina, and that after labor they are worse than useless, for if nature had intended the parts to be antiseptic she would have made them so. In his opinion the lochia are antiseptic, for they plug the open absorbents, and if they are removed by douches there is an increased chance of infection. If we expect to keep out germs, we must go back of the vagina into the uterus,

where there is a large surface of open mouthed veins ready to absorb them. Yet he ventures to assert that there are not a half-dozen doctors in Washington, who wash out the uterus in all cases, or even three who use intra-uterine injections after the forceps. He thought that in a population where there was so much bad hygiene, illegitimate pregnancies and abortions, that it was surprising that there were "only" twenty-nine deaths from puerperal fever.

Dr. A. Y. P. Garnett said, that now-a-days when any man opposed antiseptics, he laid himself open to criticism. He thought that individual experience was worth more than all the hospital statistics put together. He has a pair of forceps with which he has delivered sixty-two women; he has never used antiseptics, and has never had a case of puerperal fever in these sixty-two cases. He thought that the great value of Listerism was in the systematic cleanliness which it introduced into medicine and surgery; this, with better hygienic surroundings, was more potent for good than the killing of germs by antiseptics. He expressed little faith in the germ theory.

Dr. S. C. Busey has more than once committed himself to antiseptic obstetrics. He may not follow the details of some of its most enthusiastic followers, but he always, to a greater or less degree, follows the antiseptic treatment in puerperal cases. Dr. Smith was wrong if he thought that those who adopted this method of treatment believed it would or ought to save every puerperal woman. They claimed, and it had been proven, that antisepsis had greatly reduced the mortality of the lying-in. The statistics Dr. Smith had quoted were only accurate in showing the number of deaths, but were valueless in regard to the causes of death. Maternity hospitals supplied the most reliable statistics, and they exhibited a greatly diminished mortality since the introduction of antiseptic midwifery. In his opinion, absolute cleanliness was the essential part of antisepsis. He frequently relied upon cleanliness and hot water vaginal injections. In all cases of post partum hæmorrhage and adherent placenta, and in some cases of instrumental labor, he employed intra-uterine hot water irrigation with the most satisfactory results. He would not advise intra-uterine irrigation as a routine practice, but whenever he had employed this method he had a rapid and complete convalescence. He believed the lochial discharge was a pathological rather than a physiological discharge. The statement that one may have had 100 cases of obstetrics without a single death, though not using antiseptics proves nothing. The next 100 cases may show a very different result. It is only in dealing with larger numbers that the value of antisepsis can be shown. The results in large maternity hospitals where it has been employed demonstrate its value. In private practice and in the country where the cases are isolated its value is not so apparent. He did not consider all the minute details of the antiseptic method essential to success in every case. They may be sometimes overdone, but we cannot tell in which they may be safely dispensed with. We do know there is vastly less serious illness and fewer deaths since their introduction.

Dr. C. W. Johnston said that Dr. Smith mentioned with surprise the fact that only twenty-nine women a year died of puerperal fever, when we consider the fact that a great number are "colored" women with the worst hygienic surroundings, etc. So far as his observation goes, and he believes the experience of the President agrees with his, he finds the colored race peculiarly insusceptible to certain inflammatory diseases which are destructive to the whites. In his service at the Central Dispensary, in about 500 colored and white women, equally exposed to disease, he found relatively fewer colored women suffering from pelvic inflammation than he did white women. Among the colored there are frequent cases of venereal disease, but even in those with the so-called "latent gonorrhœa" he has been able to find but one case of pyosalpinx.

Dr. Mackall said the statements made by Dr. Fry had made more impression upon him than all the statistics. It is true that he thought he had seen but one fatal case of puerperal fever, and that in consultation, he had always considered himself lucky to get off without trouble after forceps delivery. In his experience there has usually been more or less offensive discharge in these cases. He does not believe that there is a specific germ for puerperal fever, but some malign influence conveyed to the woman, from either a cadaver, a case of erysipelas, or something of that sort. Formerly we were unable to stop the epidemics of what was then called "metritis," with calomel, etc., but lately he has seen severe cases checked by bromo chloralum, which was the form of antiseptic he used. He contends that if such a result can be obtained from antiseptics in an infected system they must be infinitely more valuable as a preventive of the ingress of the poison.

Dr. Smith said that the hospitals of the present day were not as they were—say sixty years ago. In those days there was faulty drainage, and as likely as not cess-pools were just under the windows. One could not expect such results as we get now a days, under those conditions. Dr. Busey had referred to the use of antiseptics in post-mortem hæmorrhage. In one of the cases he had just alluded to there had been tremendous hæmorrhage which he had stopped by packing with ice. No antiseptic had been used, and still there was a good recovery. In another case in which he had applied the forceps to the after-coming head, there had been no fever, though without the use of antiseptics. Dr. Busey says that he may have septicæmia at any time unless he uses antiseptics. He would say to Dr. Busey that *he* may at any time meet a case which antiseptics would not save. He did not believe that a germicide strong enough to kill the germ would be tolerated in the uterus. One of the most poisonous of gases, sulphuretted hydrogen, is common enough in the intestine, and yet nearly every child has had intestinal worms of some sort, upon which the poisonous gas failed to act.

Dr. Mackall asked Dr. Fry if he has had any cases of mammary abscess since using antiseptics. He has had several cases, all following fissures of or about the nipples. He understands it is claimed that the use of antiseptics is preventive of abscess. The

need of forceps is increasing. One supposes that he is going to have a short labor, but the pains gradually diminish in intensity and the head stops in its descent. Ergot has no effect or is dangerous; it may be successful in starting up pains or it may fail, chloral has failed; and finally resort to the forceps is necessary. If, as seems probable, the danger to the mother is increased by their use, we must find some means to lessen the mortality, and this we seem to have in antiseptics.

Dr. Fry, in closing, said that puerperal fever does not occur often in the practice of midwives and in the class of patients which Drs. Smith and Gleeson speak of as being attended by these women. It was this fact, among others, that led Semmelweiss to make the investigations that subsequently laid the foundation for antiseptic treatment. The disease is far more prevalent among the patients attended by practicing physicians, and the infection is probably conveyed by the examining finger of the obstetrician. Parvin relates the case of a French surgeon who, after having visited a patient suffering with phlegmonous inflammation of the thigh, made a vaginal examination of his wife. The lady had been delivered seventeen days before, and up to that time was doing well. She contracted septicæmia and died. Dr. Smith says he has never had a serious case of any nature after the use of forceps; without them he has had four cases of puerperal fever and two deaths. He goes on to argue the question in such manner as to make one believe that the universal application of forceps would be desirable. In the case which Dr. Smith relates where forceps was used in three labors but not in the fourth, and the patient did well after all the labors except the last. Dr. Fry supposes that the same indications for the use of instruments existed in the last labor as in the others, and they should have been used.

Dr. Smith's objection to the use of vaginal douches during labor, and his theoretical ideas regarding the value of the vaginal mucus, cannot have much weight when opposed to the combined experience of obstetricians who have all the opportunities of perfecting antiseptic precautions by observation in maternity institutions. As a matter of fact Dr. Fry does not himself employ vaginal injections during labor unless it is protracted. He does, however, without exception, employ them before and after the use of forceps or any instrumental interference. He does not approve of antiseptic vaginal injections during the puerperium unless demanded by some complication—fetid lochia, fever, etc. He quoted from an article by Dr. Baruch, of New York, the results of a number of maternity hospitals, all of which employed antiseptic precautions. These precautions were much the same in all of the hospitals except one class used vaginal douches during the lying-in, while the other only made use of them when specially indicated. The advantage, as demonstrated by percentage of recoveries, was strongly in favor of the latter.

According to Dr. Smith, if prophylactic douches be given at all, they should be applied into the uterine cavity. This is directly contrary to the chief rule of antiseptic treatment, which teaches that everything is dangerous that is not absolutely necessary. The dangers of prophylactic intra uterine injections have been demonstrated by Hoffmeier. In a series of cases, over 200 in number, he administered an intra uterine injection as soon as labor was completed, and in another series of about the same number of cases, he omitted the injections. The morbidity was fifty per cent. greater in the cases that were treated by the injections. Even when fever exists, intra-uterine injections should not be used until vaginal douches have failed to give relief. Delay, however, must not be permitted many hours.

Dr. Garnett attributed to cleanliness the success of the antiseptic system. It is, indeed, the basis of that system, but epidemics of childbed fever were not arrested until antiseptics were employed. When Semmelweiss began his labors at the Vienna Obstetric Clinic, he found a maternal mortality of more than 5 per cent. cleanliness, ventilation, and isolation were brought to bear against the disease, and it went up in spite of all to a 10 per cent. death rate. A solution of chloride of lime was employed to wash the hands, instruments, etc.,-and the performance of operations prohibited, and the mortality immediately dropped to 1.25 per cent. Dr. Smith asserted that an antiseptic solution strong enough to kill germs cannot be used for intra-uterine injection without injury to the woman. A solution of bichloride of mercury 1 to 20,000 is strong enough to destroy the vitality of micro-organisms, and yet it is used for intra-uterine injection in the proportion of 1 to 2000. The excellent results that follow antiseptic treatment are not attributable, as Dr. Smith suggests, to the use of modern and well-built hospitals. The success is equally great in the older institutions, which formerly were scourged by puerperal fever. The Paris Maternity and the Vienna Hospital illustrate this fact.

Dr. Fry had met with but two cases of mammary abscesses in his practice, and suppuration had occurred in these before they came under observation. Dr. Alloway, of Montreal, says he has not had a case of suppurative mastitis since he has been employing antiseptic vaginal douches during and after labor, while before that practice was adopted it was not uncommon. According to the observations of Behm, the staphylococcus and streptococcus are found in the pus of mammary abscesses, and he offers the more plausible theory that they gain access to the gland lobules through fissures of the nipple.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Diabetes—Large Ventral Hernia—The Aneurismal Diathesis—Glycozone.

At the last meeting of the County Medical Association Dr. Austin Flint made some very interesting remarks concerning diabetes, of which, as is well

known, he has of late years been making a special study. The case which suggested them was one which was related by Dr. Gouley. The patient was a lady 72 years of age, who suffered from ventral hernia for more than twenty years, and Dr. Gouley said it was the largest ventral hernia that he had ever seen. She had also been diabetic for at least thirteen years, and the form of glycosuria with which she was affected was that which the French term intermittent glycosuria. She finally died of exhaustion in an attack of acute bronchitis, and at the autopsy the hernial sac was found to consist of nothing but skin, and that very thin. Dr. Gouley said he had always advised against operative interference in the case, and the condition of affairs found after death showed how unavailing any operation would have been. The sac contained the entire intestinal canal, with the exception of the duodenum, the caput coli, and the rectum; so that it could not possibly have become any larger than it was. The diameter of the neck of the sac was no less than nine inches. There was marked sclerosis of both the kidneys and of the spleen, and this condition was no doubt attributable to an old mitral stenosis which was found to be present.

In commenting upon the case, which he had seen in consultation with Dr. Gouley, Dr. Flint remarked that it presented some points of extreme interest to him. This intermittent diabetes was a variety of the disease which he had seldom observed, and in regard to which he said he had formerly been somewhat skeptical. There could be no doubt, however, that this was an instance of true intermittent diabetes, and not one of those cases, of which he had seen quite a number, in which the sugar disappears from the urine for a time after the patient undergoes a moderate restriction of diet. The case was of great interest, again, as regards the matter of diabetic coma. This patient had at no time exhibited the slightest tendency to coma, but retained consciousness perfectly up to the last. In her enfeebled condition she was unable to dislodge the mucus accumulated in the bronchial tubes, and died simply of exhaustion.

Dr. Flint then referred to another case of diabetes which he had recently seen in consultation with Dr. Frederic Dennis. The patient was a lady 70 years of age, who for seven or eight years had had diabetes which was by no means of an intermittent character. On the contrary, it was persistent in character, and was attended with nearly all the typical symptoms of the disease. For some time the case had been under the care of Dr. Lusk, but on account of the fact that gangrene attacked one of the patient's feet it was transferred by him to Dr. Dennis. She had been taking very large quantities of milk daily, and this was stopped by Drs. Dennis and Flint, who also placed her upon a very strict anti-diabetic diet and gave her Clemens' solution of arsenite of bromine in 3-drop doses. Under this treatment the improvement in her condition was very marked. The quantity of urine passed *per diem* was reduced from 110 to 50 ounces, and sugar was entirely eliminated from it. The condition of the foot also improved for a time, but the gangrene afterwards extended, and the patient finally died of exhaustion. In this case, also, the patient's mind remained perfectly clear to the last, and there was not the slightest approach to anything like diabetic coma.

Dr. Flint went on to say that during the last two or three years he had accumulated records of almost ninety cases of diabetes, and that he had taken unusual care to follow them up. Some of the patients had died under his observation, but he had never yet met with a single instance of diabetic coma. He had, however, records of cases, seen by him at one time or another, which had terminated fatally under other physicians, and in which the patients were reported by them to have been the subjects of diabetic coma. In this connection he related the case of a very wealthy lady to whom the restraint of the restricted anti-diabetic diet became intolerable and who, on leaving for the country, announced her intention of trying the effect of a return to general diet for a time. He afterwards learned that she had died in a state of coma. He also knew of another case in which the patient died of diabetic coma after indulging in a protracted "sugar debauch." In still another case the patient had died in the same way after travelling to Carlsbad. During the journey to that resort she had lived upon an unrestricted diet, and he had been informed by her physician that by the time she arrived there she was in a practically hopeless condition.

The idea had been expressed in certain quarters that the restriction to anti-diabetic diet tended to produce diabetic coma; but Dr. Flint's experience was directly opposed to any such theory. So far from its leading to this condition, he was convinced that it was extremely rare for patient's to die of diabetic coma while they were living on a strict anti-diabetic diet, and he believed that this restricted diet actually prevented, or tended to prevent, diabetic coma. This condition was apparently due to the presence in the blood of some obscure poison which the kidneys were unable to throw off, and it was noticeable that when the coma came on, the sugar disappeared from the urine. He was at present engaged in a series of investigations upon this important subject, and hoped that at no distant date he should be able to ascertain certain facts which might perhaps throw some light upon it. In conclusion, he made some remarks upon the neglect of patients to faithfully carry out the anti-diabetic regimen. It was this which had brought the method into bad repute, and he thought that physicians, as a rule, did not pay sufficient personal attention to the diet of their cases. It was very important that this should be made as pleasant as possible for the patient, and that no efforts should be spared to constantly tempt his appetite with novel articles and dishes belonging to the allowable class.

The paper of the evening was by the President of the Association, Dr. John Shrady, and was on the subject of *The Aneurismal Diathesis*. He said that he was not sufficiently settled in his convictions to formulate any law comprehensive enough to embrace all cases, but thought he was warranted in making the

statement that a tendency to aneurism might be recognized in the following instances:

1. In individuals possessing a large, not necessarily hypertrophied, heart, the pulsations of which are quick and forcible; this condition generally being present in the long-bodied and short-limbed. These individuals are necessarily muscular, to compensate for a relatively poorly developed osseous system.

2. There are certain racial configurations in which fatty degenerations are prominent, as, for example, among the Teutons, and exceptionally among the Celts, in which the aneurismal tendency is a marked feature.

3. There may be an induced or cultivated diathesis, as among those addicted to athletic sports, who primarily over-tax the heart, and secondarily the circulation.

4. Obesity, as presenting an enfeebled resistance to forces which have been adjusted to a different condition of things.

5. The diathesis may be latent from lack of circumstances awakening it into existence, as in the case of those leading lives of luxury and ease.

In conclusion, he remarked that the absence or suppression of the emotional temperament may retard or altogether avert the final catastrophe.

On this occasion he introduced to the notice of the Association two new antiseptics and disinfectants, which he had tested with very satisfactory results in his own practice. These are glycozone, consisting of chemically pure glycerine with four volumes of ozone, and solution of peroxide of hydrogen, and they both possess the advantages of being colorless fluids.

As Mayor Hewitt was prohibited by the law from appointing a physician successor to General Shaler, as President of the Board of Health, he did the next best thing by giving the position to an expert in sanitary science outside the profession. Mr. James C. Bayles, the Mayor's selection, for the past sixteen years has been editor of the *Iron Age and Metal Worker*, and has long been considered an authority on drainage and sanitary engineering. In addition, he is a gentleman of much public spirit, and while his appointment has been a source of chagrin to the politicians, the community in general has every reason to be satisfied with it.

At the commencement of the University Medical School this year there were 151 graduates; at that of the Bellevue School 134; and that of the Long Island College Hospital, in Brooklyn, 30. The thirtieth annual commencement of the New York College of Veterinary Surgeons and School of Comparative Medicine, was held at the Carnegie Laboratory March 16th when the address to the graduates was made by Prof. Joseph H. Raymond, of Brooklyn, and the diplomas were presented by the President, Dr. Wm. T. White. This is the oldest veterinary school in the country, having been chartered in 1857, and its friends have of late been interesting themselves greatly in its behalf; so that it is now provided with a most excellent Faculty, and with every needed facility for the successful scientific and practical study of this department of medicine. P. B. P.

ASSOCIATION ITEMS.

AMERICAN MEDICAL ASSOCIATION.

SECTION OF OBSTETRICS AND DISEASES OF WOMAN.

The following papers, in addition to those mentioned in The Journal, January 15, 1887, are announced for the June meeting in Chicago:

1. Ely Van de Warker, Syracuse, N. Y., "Laparotomy as a Cure for Tuberculosis of the Peritoneum."

2. John A Miller, San Francisco, Cal., "Erosions *vice* Ulcerations of the Vaginal Portion and their Relation to Lacerations of the Cervix, with Practical Hints when not to Perform Emmet's Operation."

3. John Morris, Baltimore, Md., "Treatment of Placenta Prævia."

4. Wm. M. Findley, Altoona, Pa., "Ante-partum Hæmorrhage."

The following gentlemen have signified their intention of contributing papers, but have not yet announced the topics:

H. F. Campbell, Augusta, Ga.
L. Ch. Boislinière, St. Louis, Mo.
S. S. Todd, Kansas City, Mo.
E. H. Trenholme, Montreal, Can.

[Signed] F. M. Johnson, M.D., *Chairman*,
Kansas City, Mo.
W. W. Jaggard, M.D., *Secretary*,
2330 Indiana Ave., Chicago.

MISCELLANEOUS.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 19, 1887, TO MARCH 25, 1887.

Capt. Wm. W. Gray, Asst. Surgeon, leave of absence further extended two months. S. O. 62, A. G. O., March 17, 1887.

First Lieut. Guy L. Edie, Asst. Surgeon, leave of absence extended three months. S. O. 67, A. G. O., March 23, 1887.

First Lieut. Jefferson D. Poindexter, Asst. Surgeon (recently appointed), ordered for temporary duty at U. S. Military Academy, West Point, N. Y., relieving Capt. Richard W. Johnson, Asst. Surgeon, who will return to his proper station (Ft. Adams, R. I.). S. O. 62; A. G. O., March 17, 1887.

Capt. Frank Reynolds, Asst. Surgeon (retired), died March 4, 1887, at Oakland, Cal.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING MARCH 26, 1887.

Cordeiro, F. J. B., Asst. Surgeon, detached from the Navy Yard, Boston, and placed on waiting orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDED MARCH 26, 1887

Bailhache, P. H., Surgeon, to proceed to Mobile, Ala., Pensacola, Fla., Ship Island, Miss., and New Orleans, La., as inspector. March 14, 1887.

Long, W. H., Surgeon, granted leave of absence for seven days. March 16, 1887.

Goldsborough, C. B., Surgeon, granted leave of absence for thirty days. March 14, 1887.

Devan, S. C., P. A. Surgeon, to proceed to Tacoma, Washington Territory, as inspector. March 19, 1887.

Long, W. H., Surgeon, leave of absence extended five days. March 23, 1887.

Urquhart, F. M., P. A. Surgeon, relieved from duty at Norfolk, Va; ordered to Washington, D. C., on special duty. March 22, 1887.

Pettus, W. J., Asst. Surgeon, when relieved by P. A. Surgeon Guitéras, to remain at Charleston, S. C., "waiting orders." March 24, 1887.

THE

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ORIGINAL ARTICLES.

OPERATIONS FOR PHIMOSIS AS A MEANS OF CURE OR RELIEF OF SOME NERVOUS AND OTHER SYMPTOMS.

Read before the Washington Obstetrical and Gynecological Society, June 15, 1883.

BY G. L. MAGRUDER, M.D.,

OF WASHINGTON, D. C.

PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS, MEDICAL DEPARTMENT GEORGETOWN COLLEGE; IN CHARGE OF DISEASES OF CHILDREN, CENTRAL DISPENSARY, ETC.

Recent continued success in the relief of nervous and other troubles by the operation of circumcision and breaking down of the adhesions sometimes found existing between the prepuce and the glans penis, has induced me to submit the report of some cases, with a few remarks thereon. Since the date of the publication of Dr. Sayre's operations in 1870—upon reflex nervous disturbances—much has been written both *pro* and *con*. The mass of testimony derived from actual experience has been steadily accumulating to prove the value and truth of his announcement. But notwithstanding this, there are some persons who still seem either to ignore or, at least, to overlook the value of the statements that have been published.

I shall not attempt to enter deeply into the pathology of the troubles attending congenital phimosis, with or without elongation and adhesion of the prepuce, but will be content with a bare narration of facts as they have appeared to me. Research into pathological conditions can never be very satisfactory, for the want of opportunity to investigate the same, since the relief of symptoms almost always ensues upon the removal of the exciting cause, and, should death occur from other causes whilst one was suffering from these troubles, the immediate cause of death would probably mask the condition derived from preputial irritation.

This subject has interested me greatly. My experience has been derived from largely over a hundred cases. In nearly all there was either phimosis, elongated prepuce or adhesions, sometimes both. Amelioration, and more frequently perfect success, rapidly followed the removal of the abnormal conditions—occasionally no relief was obtained. The improvement, more often than not, was obtained without the assistance of any medication. In some cases tonics or sedatives were required for awhile. At times the relief given has been beyond expectation.

Case 1.—F., from the day of his birth, had to have a catheter passed night and morning to empty the bladder. All other means failed to give relief. The orifice of the prepuce was so small that it was with difficulty I could force the instrument. Upon the fifth day I circumcised the child. Relief was immediate and permanent.

Case 2.—W. L., aged 2 years, was very backward in walking. After he did commence to walk, his gait was very uncertain, and he stumbled at the slightest irregularity in the floor. Slight talipes valgus was appearing in both feet. Examination showed adhesions of prepuce extending almost to orifice of urethra. These were broken down and a large amount of smegma was removed from around the corona glandis. This accumulated rapidly, and was daily removed by the mother. Gaiffe's battery was used on the muscles of the leg twice a week for four weeks; by the end of this time the improvement was very marked. Recovery was perfect.

Case 3.—P., aged 2, had not walked; was able to stand for a brief while by the side of a chair. Locomotion was accomplished upon his buttocks by thrusting his feet first on one side and then on the other. Adhesions were broken down. Very soon the child was able to use his legs.

Case 4.—Willie G., aged 4, had suffered continually with incontinence of urine. The mother informed me that this was a nightly occurrence. Circumcision was performed. During the process of healing urine was passed involuntarily once or twice. In this case, the cicatrization caused the glans to be compressed. The trouble returned occasionally. A pair of dressing forceps inserted under the prepuce and forcibly opened broke up the adhesions and relieved the contraction. There was no return of the incontinence.

Case 5.—Francis McN., aged 11, was brought to my service at the Central Dispensary complaining of pain in the left hip joint, outer side of thigh and knee joint. These pains continued at night when in bed, and frequently were more severe at this time. There was decided atrophy of the muscles of the back and of the inside of the thigh. The left leg was much weaker than the right; frequently it would give way under him, thereby causing him to fall. The least unevenness in the roadway would cause him to stumble. He had been under the care of two physicians at different times during the preceding two years. One pronounced the patient as suffering from hip-joint disease and so treated him for awhile. I did

not hear the other diagnosis. Circumcision gave perfect relief both from the pain and the impaired locomotion. Recovery was complete. This case might readily have been mistaken for one of hip-joint disease. A number of months have now elapsed since the date of the operation, and there has been no return of the unpleasant symptoms.

Case 6.—Wm. D., aged 10, has always suffered greatly when he urinated. The father tells me that the agony is terrible and that it requires some time for him to empty the bladder. Examination disclosed an irritated prepuce. Adhesions existed almost to the orifice of urethra. Upon breaking these down marked relief was obtained, and entire relief was given as soon as the laceration of the ruptured adhesions was healed.

I have found this abnormal condition of the genitals in all my cases of hernia in children. I have only seen one case of talipes in girls. In all of those in boys, I have noticed phimosis, adherent or elongated prepuce. In November, 1881, this subject was discussed by the Neurological Society of New York. Having been requested by Dr. Seguin, through my friend Dr. Burnett, to send him a summary of my experience, I forwarded him the following account of some of my cases. This was printed in the report of the proceedings in the *Medical Record* of November 19, 1881. Through some mistake they were credited to Dr. McGuire, of Washington, instead of myself. I will here give them:

Case 1.—J. M., aged 18 months, had been troubled with incontinence of urine for several months. Prepuce much elongated. Performed circumcision January 15, 1876. No medicine was given. Perfect relief obtained. No return of trouble to this date.

Case 2.—J. W., aged 8 years. This boy had continual incontinence of urine for several years; drawers were always wet. Prepuce much elongated and adherent. Performed circumcision April 16, 1880. May 13, 1880, the dribbling during the day had almost ceased. He has passed water in bed four times at night since the operation. Small doses of strychnia were given. There was marked improvement, but not perfect success. Medication was continued. At present he is well.

Case 3.—G. T., aged 10 years, April 15, 1880, complained of constant pain in popliteal space of left leg; great weakness of the legs, headache, palpitation on the least exertion. Broke down adhesions which extended to orifice of urethra; gave no medicine. June 22, 1880, perfect relief; no return of symptoms.

Case 4.—January 15, 1880, John D., aged 19 months, cannot walk, stands with difficulty, head is thrown back; is peevish, restless and bow-legged; whines continually. Ordered malt, cod-liver oil and hypophosphites. May 6. the child is stronger, but the above symptoms still persist. Examined penis. Adhesions broken down and smegma removed; medicine continued. May 20, marked improvement. Adhesions had reunited; again broke them down. August 16, child walks readily.

Case 5.—John B., aged 2 years, has great muscular debility of the lower extremities; locomotion difficult. Prepuce elongated. Circumcised June 21, 1880. On 28th much stronger, walks better. August 16, improvement continues. There is slight inclination to talipes valgus. This case has required constant care up to the present time. His condition now is very favorable.

Case 6.—July 29, 1880, W., aged 3 years, cannot walk readily. Has incontinence of urine. Broke down adhesions and removed a large amount of smegma. October 18, no return of incontinence; walks much better.

Case 7.—Charles H., aged 6 years. This child was very backward in walking; is now weak in lower extremities, has incontinence of urine and inguinal hernia. August 5, 1880, broke down adhesions and removed a quantity of smegma. August 19, marked improvement. September 6, much stronger; no return of incontinence.

Case 8.—C. R., September 23, aged 2½ years, is unable to stand; very little power in legs, muscles of thigh loose and flabby. Circumcised and broke down adhesions. Ordered malt and hypophosphites. October 31, 1881. To day the child runs around readily.

Case 9.—Jos. W., aged 2 years, August 16, 1880, walks with great difficulty, drags his legs and is easily pushed down. Adhesions were broken down August 23. Walks without dragging his legs. September 27 circumcised him. October 4, marked improvement. The progress in this case was not so decided as in others. Gaiffe's battery was applied. This seemed to be beneficial.

Case 10.—Pierce W., aged 2 years, stumbles on coming in contact with the least elevation; walks very awkwardly. Slight talipes valgus. Circumcised and broke down adhesions. Marked improvement.

Case 11.—Wm. F., aged 2 years, is unable to stand, has laryngismus stridulus. Muscles of thighs and legs very poorly developed. The laryngismus was treated for one week without any improvement, then he was circumcised and the treatment continued. One week later he was better and could stand by a chair. Improvement was continuous and rapid.

Case 12.—Willie B., aged 1 year, is very weak throughout the whole left side. This side is not so well developed as the right. He drags the left foot when he crawls, and has had frequent convulsions. Circumcised and broke down adhesions. Three weeks later the child had much better use of his extremities. The improvement continued. Electricity was used in this case.

Case 13.—E. L., aged 11 years. Incontinence of urine. Broke down adhesions. No improvement.

Case 14.—W. E., aged 4 years. This child had a severe case of talipes equino-varus. The tendo-Achilles was cut and the foot brought into position. About four months afterward I noticed the prepuce much elongated. Circumcised and broke down adhesions. Brace was applied and electricity used. The improvement was rapid and excellent.

Case 15.—Richard G., aged 4 years. Incontinence of urine. Circumcised and broke down adhesions. Perfect relief.

Case 16.—W. B., aged 13 years. This boy had convulsive seizures almost continually, sometimes

forty or fifty in the twenty-four hours; would awake and scream out during the night. Easily excited, and would at times be almost uncontrollable. Prepuce elongated and adherent. Broke down adhesions December 15, 1880. Ordered no medicine. I saw him again January 11, 1881. He had not taken any medicine since I broke down the adhesions one month ago. The attacks during the day had recurred very rarely and the nights were very much less severe. Circumcised him October 23, 1881. The improvement has been decided and continuous. For awhile after the circumcision there was immunity from the convulsive seizures for a week or more at a time. Then they would return occasionally at night. To control this I gave bromide of potassium. Now he goes to school regularly. His teacher gives excellent reports of his behavior and progress in his studies.

Case 17.—Joseph L., aged 6 weeks. This was one of the most interesting and pronounced cases that have ever come under my observation. He had never had a good night's rest since his birth, and had to be drugged to have the least rest. He cried almost incessantly night and day. The legs were in constant motion, sometimes striking the abdomen. The penis was in a state of priapism. As soon as it was touched the convulsive movements were augmented in severity and rapidity. In each inguinal region small tumors appeared when the child cried. I circumcised him March 28, 1881. As there had been such severe muscular action, I ordered ½-grain doses of chloral every hour until quieted. During the ensuing four days he took 8 grains of chloral, then medicine was discontinued. All the nervous symptoms have disappeared. The child slept readily. Three months after the operation, the mother told me that from the second day thereafter, she had not had a particle of trouble with her boy.

Case 18.—B. P., aged 10 weeks. Had not had a good night's rest since his birth. Cried and fretted almost continually. Was in constant jactitation. The urine would accumulate under the prepuce and dribble out through a very small orifice. The head was thrown back on the spinal column. The mother said that she used to pass a handkerchief around the head and fasten the ends of it to the belly band to keep it erect. Performed circumcision—did not order any medicine. Every symptom of irritation disappeared. Three months later there had not been the least evidence of return.

Case 19.—A. F., aged 13 years. Had shown great muscular debility in the lower extremities from birth, especially in the left leg. This leg would give way under him. He would fall on the street and around the house. He complained of dizziness and pain in the lumbar region, also had nocturnal incontinence of urine. Prepuce firmly adherent, almost to the orifice of urethra. I broke these down Jan. 19, 1880. No medicine was employed. There was no return of a single symptom except upon one occasion, there was incontinence of urine. He has continued to grow stronger, and is to-day, Oct. 15, 1881, brighter than ever before.

To better understand this subject it will be well to hurriedly consider the nervous supply and connections of this region.

The nervous supply to the genital organs is derived from the pudic nerve of the cerebro-spinal system and the pelvic plexus of the sympathetic system. The pudic nerve is a large branch of the sacral plexus and gives off in its course, the inferior hemorrhoidal nerve which supplies the external sphincter, integument around the anus and terminates in the perineal and the dorsal nerve of the penis. The perineal nerve is distributed by the cutaneous and muscular branches to the integument in front of the anus, the sphincter-ani, the scrotum and under part of the penis, the levator ani, transversus perinei, accelerator urinæ erector penis, and compressor urethræ. The dorsal nerve of the penis accompanies the dorsal artery of the penis, and is distributed to the glans, prepuce, the upper surface and sides of the organ, and sends off branches to communicate with the sympathetic.

In the female, the pudic nerve terminates in the clitoris, labia majora and perineum. The other branches of the sacral plexus are the muscular, the superior gluteal, and the great and small sciatic. These supply the integument of the perineum and the back part of the thigh and the whole of the leg, the pyriformis, obturator internus, the two gemelli, the quadratus femoris, the glutei, the tensor vaginæ femoris and the adductor magnus muscles. Branches from this plexus supply the hip joint, perforating the capsule, and also the knee joint. Connection with the sympathetic nerve is had immediately through the large cavernous nerve, which after joining with the dorsal branch of the pudic nerve passes forward to supply the corpus cavernosum and spongiosum. This larger cavernous nerve is derived from the inferior hypogastric or pelvic plexus. This plexus distributes branches to all the pelvic viscera, viz., rectum, bladder, and the vagina in the female. Filaments pass to the vas deferens, vesiculæ seminales and prostate gland in the male. The connection with the rest of the cerebro-spinal and sympathetic systems is intimate.

Reflex spasm and paralysis from diseases of the digestive canal, the ovaries, uterus and urinary organs have been frequently observed. Why cannot the same phenomena arise from genital irritations? A. McL. Hamilton, in his "Diseases of the Nervous System" assigns phimosis as one of the causes of spasm. Henoch, in his lectures on "Diseases of Children" attributes incontinence of urine to a spasm of the detrusor urinæ which acts more vigorously because the action of the will on the sphincter vesicæ is diminished during sleep. He says that the urine is always passed in a stream during sleep or in a half waking condition. Amongst various causes for this reflex irritation he mentions first congenital phimosis. The removal of this condition has cured the enuresis. The same author, in speaking of spasm of the glottis, calls attention to the fact that it occurs more frequently in boys than in girls and almost exclusively between the sixth and twenty-fourth month. I think that every case that I have seen of this trouble, except one, has occurred in boys. In all that I have examined I have found either congenital phimosis or

adherent prepuce. Removal of these brought relief. Might we not consider that there was some connection between the two conditions?

Erichsen, after stating that Bryant had shown that various affections of the genito-urinary organs of children, such as incontinence of urine, intermittent flow, hæmaturia, priapism, etc., were due to phimosis, and that Sayre had pointed out the important fact that reflex paralysis in various forms of spastic contractions, chiefly of the lower limbs are due to the same cause, being readily curable by circumcision, says: "In addition to these I have seen general spasmodic affections in children resembling chorea, resulting from congenital phimosis." He also states that he has known it to be a cause of impotence in the adult. Further on he says: "Every child who has congenital phimosis ought to be circumcised, and even those who, without having phimosis, have an abnormally long and lax prepuce would be improved greatly in cleanliness, health and morals by being subjected to the same operation; and it would be well if the custom of Eastern nations, whether it be regarded as a religious rite or only a time-honored custom were introduced amongst us."

Reflex paralysis is due, according to Romberg, Stanley, and Graves to a suspension of the sensory influence of the fibres of the sympathetic system and are motor spinal paralyses. Brown-Séquard attributes the origin to chronic irritation of the genito-urinary organs with secondary contraction of the vessels of the cord and atrophy of the corresponding parts. Levisson experimented by compressing the uterus, kidneys, intestine, or bladder of rabbits, and found reflex excitability abolished and a paralysis of the posterior limbs lasting until the irritation was removed. The paralysis was considered due to excessive irritation of the sensory fibres, thereby causing an arrest of the function of the motor-nerve centres.

Feinberg has observed in animals, after a coat of varnish, tremor, hyperæthesia, partial anæsthesia, increased reflex action, spasms and paralysis. Examination disclosed a dilatation of the cutaneous vessels, of the capillaries of the lung and the ramifications of the vena porta, hyperæmia of the meninges and a dusky redness of the cervical cord. If the animals survive a certain length of time, proliferation of the neuroglia occurs with atrophy of the nerve tubes from compression. Rosenthal, quoting these observations, says: "Thus the irritation of the cutaneous nerves produces a reflex paralysis of the centres of vascular innervation in the cord." Now, if this follows from irritation of the cutaneous nerves, can we not expect as much from irritation of the nerves about the head of the penis. The same author mentions the fact, that several cases had been referred to him by Prof. Dittel, which upon exploration of the bladder had given negative results, whilst a careful examination of motion and sensation showed a diminution of the various forms of sensibility in the legs; in the trunk there was abnormal excitability of the nerve trunks or of the genital organs. He cites a case of a girl, aged 23 years, who was relieved of a paresis of three week's standing, by the removal of a needle deeply imbedded in the vagina.

Leyden reported three cases of paraplegia following diseases of the bladder, which commenced by symptoms of motor and sensory irritation. He found diffuse softening of the cord in two cases. He thinks that a sacro-lumbar neuritis may be progagated to the cord in diseases of the bladder.

Dr. Otis has seen many nervous disturbances relieved immediately after the removal of genital irritation and believed that this was more than coincident; moreover, he was firmly convinced that reflex paralysis was possible. Dr. Hammond also admits the possibility of preputial irritation giving rise to paraplegia. Dr. Seguin has never seen reflex paralysis from irritation of the genitals of the male, but had seen reflex nervous troubles, and believed that the genital irritation should be relieved. He had met with paralysis from irritation of the deep urethra and uterine disease. Cure of the uterine disease was followed by rapid recovery from the paralytic symptoms. Dr. Campbell Black has seen hæmaturia, dysuria, incontinence, retention of urine, reflex paralysis, epilepsy, chorea, as well as spermatorrhœa, prolapsus ani, and other troubles from genital irritation. He, as well as Barwell give the priority of calling attention to these troubles to Dr. Sayre. Black attaches immense importance to genital irritation as a source of infantile paralysis and many other indications of nervous disturbance in childhood.

Barwell, ("Diseases of the Joints." Wood's Library, pp. 289 and 290) says: "A good many years ago I was struck with the fact that nearly all the boys admitted for hip disease into Charing Cross hospital had congenital phimosis. In a short time this coincidence was found to be nearly, if not quite constant. At last, in the beginning of 1873, I began to note, in a hundred male cases of hip disease occurring in my private practice or admitted into hospitals, the presence or absence of this condition; for the sake of better classification they were divided into classes:

1st Degree.	2d Degree.	3d Degree.	Elongation.	Normal.
39.	27.	17.	11.	6.

The same divided in ages—

	1st Degree.	2d Degree.	3d Degree.	Elongation.	Normal.
2 to 4,	3.	2.	0.	1.	1.
4 to 6,	7.	5.	2.	3.	3.
6 to 8,	16.	11.	9.	4.	1.
8 to 10,	13.	9.	6.	3.	1.

First degree: The opening in the prepuce, a mere pin hole, so that on retraction no part of the glans or only a minute portion of the urethral lips could be seen. Second degree, in which all or a considerable part of, but nothing beyond the utheral orifice could be uncovered. Third degree, in which the prepuce, when retracted, uncovered some portion, but only a portion of the glans. Fourth degree, elongated prepuce, projecting more than a quarter of an inch beyond the glans, but capable of entire retraction. Fifth degree, normal. It will be observed that of these cases eighty-three have phimosis; that only six have normally formed prepuces, and that from complete or the first degree of phimosis to which class more than one-third of the cases belong, the number steadily declines to normal. I would

also point out that these are not fortuitous coincidences, because for two years at least before commencing tabulation, this association was remarked. Furthermore, I asked my friend, Mr. Morant Baker, to inquire for me about the prevalence of hip disease at the Evelina Hospital, which is largely used by Jews. He tells me that few children are there admitted for hip disease, and that most of those so received belong not to Jewish, but to the Christian community. The important fact, however, is simply, coincidence of phimosis and hip disease—a coincidence which I should never have dreamed of or imagined, had it not been forced upon my observation. Upon the mode in which the one influences the other I would rather not speculate further than to point out that phimosed children have facile, frequent and often long continued priapism; that this condition, unnatural in the infant, must produce after a time a certain irritability or irritation of the lumbar spinal cord; that from this part the various nerves of the pelvis and lower limbs are given off; that the influence of spinal irritation on the trophic nerves is well known; and that just at this particular period large trophic changes are in progress about the hip joint." During the time that he was collecting these 100 cases in boys, he met with 74 cases among girls. In a large proportion of them he found vulvitis, vaginitis, protruding nymphæ or nymphæ covered by a cuticular surface.

Dr. Sayre noticed this same coincidence, and connected the condition with hip joint disease by the supposition that the majority of cases of this affection start from a fall or injury. The increased muscular debility from reflex irritation readily contributes to these falls.

Charcot, speaking of urinary paraplegia, says: "The very number of the cases in which we see paraplegia appear in the course of disease of the urinary passages is of itself enough to show that the phenomenon is no chance coincidence."

From the foregoing I think that we are justified in the conclusion that phimosis and adherent prepuce give rise to varied troubles of more or less gravity, manifesting themselves either in the muscular, osseous or nervous systems; and that the removal of these abnormal conditions of the penis frequently affords marked relief, and at times perfect and permanent cure.

THE IMPORTANCE FOR INSTRUCTION IN FIRST AID TO THE INJURED.

BY W. THORNTON PARKER, M.D. (Munich).
OF NEWPORT, R. I.
LATE A. A. SURGEON U. S. ARMY.

In 1884, while acting Post Surgeon at a lonely frontier station, I became very much interested in the work of the New York State Charities Association. I had been in correspondence with this organization for some time, before it occurred to me that some useful practical work in this direction might be accomplished in the United States military forces. I accordingly prepared the following letter, and as I have been informed that it was *probably* one of the first on the subject sent to our military medical authorities since the War, I will reproduce it here, merely to introduce the remarks I am about to make on military first aid to the injured. I have never received any reply to the letter, not even an acknowledgment of its receipt, and it was probably ignominiously pigeonholed:

To the Medical Director Dep't of the Missouri:

Sir:—I beg leave to call attention to the great success of the New York State Charities Association in organizing societies in various sections of the country for the purpose of affording instruction by lectures, illustrations, etc., in "First Aid to the Injured." The efforts have met with much general encouragement from the public, and their good effects have been recognized. It has occurred to me that it might be advisable to have something of this kind attempted at our military posts, providing suitable instruction in "first aid to the injured" to both officers and men. It undoubtedly frequently happens that officers in command of small detachments, deprived of the services of a surgeon, are called upon to extend aid to the sick and wounded, and although on more than one occasion officers have been found who were not only ready, but able to offer valuable assistance, yet a careful instruction in the course suggested would enable them to more fully afford relief and save considerable suffering. At all of our larger posts, and especially at Fort Leavenworth, this course of instruction could be very easily carried out, and suitable appliances being already on hand, little if any expense would be incurred to illustrate the lectures. It is reasonable to believe that many officers and men would be interested in these lectures, and only good would result to the Army by a general distribution of the knowledge which may be able not only to alleviate suffering, but even to save life. Very respectfully, your obedient servant, W. Thornton Parker,
Act. Asst. Surgeon U. S. A.

Ft. Gibson, Indian Ter., June 6, 1884.

It is possible, however, that the letter was referred from one office to another until at last it attracted some official notice in the War Department, and may have indirectly resulted in the promulgation of the following order, which must prove of considerable value to the Army in the near future:

General Orders, No. 86. Adjutant-General's Office, *Washington, Nov. 20, 1886.*

The Secretary of War being of opinion that instruction by lecture or demonstration in the simpler practice of medicine and surgery may with advantage to all concerned be given by officers of the Medical Department stationed at military posts to other officers and the enlisted men serving thereat, directs that, whenever practicable and where voluntary attendance in sufficient numbers can be secured, arrangements be made for a series of such lectures on the practical treatment of the unhidden diseases, early aid to the injured, the most expeditious and proper manner of treating temporarily gunshot wounds, poisoned wounds, frost-bite, bruises, dislocations, hæmorrhage, and fractures of bones; application of the tourniquet; the most approved method for resuscitation from drowning; and other kindred subjects.

Medical officers delivering these lectures will forward, not later than June 30, 1887, through the regular military channels, to this office, a report of the results, beneficial or otherwise, which may have attended them up to that date.

By command of Lieutenant-General Sheridan:

R. C. Drum, *Adjutant-General.*

Whatever the fate of my communication to the Medical Director may have been, it is very gratifying for me to see that our military authorities are gradually awakening to what has been proven an absolute necessity in foreign armies. Probably in no other country has this matter secured the attention and won the success which has attended this humane and practical movement in England.

One of the best appliances for ready use in first aid to the injured is the Esmarch triangular bandage. This is a strip of cloth fifty inches long, triangular in shape, its greatest width being 24 inches. Upon the bandage are six pictures illustrating its use, and with the bandage is a little book describing its use. For the benefit of those who do not read French or German I have translated the directions and given the foreign address of the manufacturers, although I presume that Messrs. Geo. Tiemann & Co. can furnish the packet with English directions in any needed quantity.

Translation.

FIRST AID TO THE INJURED.

Under this title the undersigned Society offers to persons in every state and condition—in the workshops, manufactories, mines, and railroad organizations, engineering undertakings, to all travelers and emigrants, and to any thoughtful family—an emergency packet for wound dressing, which, thanks to its small, compact form, its convenient arrangement and facility of packing, will give it a place everywhere; it can be carried under all circumstances. Each one of these packets is sold for one franc (fifty centimes) postpaid, and contains: First, a compress composed of cotton charpie of Dr. Bruns, and an antiseptic bandage. These two kinds of bandage have the property of absorbing the fluids, blood and pus, and protect the wound against hurtful influences. 2. Two bands of linen, one wide, the other straight, with pins for fastening them. 3. Some "ping-hawar-yambi," as a hæmostatic application. 4. A triangular piece of linen prescribed by Dr. von Esmarch. With the aid of this apparatus the majority of bandaging operations may be accomplished without any special skill. The method is as follows: The compress, which is folded in four, unfolds in such a manner that the cotton lint will be covered entirely by the bandage (antiseptic), which gives a surface similar in form to a sheet of letter-paper. We cut off each time the requisite quantity for covering the wound. After having washed the latter, and controlled the hæmorrhage by means of the application of the ping-hawar-yambi, it is covered with a piece of the compress, which is fastened by means of the linen bandages, which, should the wound be upon the head, neck, trunk, or main parts of the extremities by the use of the triangular bandage (Esmarch's). If it be a case of an open or deep wound, you form with the compress a pad proportioned to the size of the wound, which is introduced therein after previously saturating it with good olive oil, if this be within reach. According to the abundance of the secretions from the wound, it will be necessary to change the bandage once or oftener during the day; in this case, the same bandage and the same linen can be employed—but it is important to renew the compress or the pad. As to the employment of the Esmarch's bandage, we will quote the words of Professor Esmarch, who, in his celebrated work entitled "The First Aid in Bandaging on the Field of Battle," expresses himself as follows:

"According to the part of the body wounded, the triangular bandage is used as follows: It is folded in the form of a cravat by rolling the point several times in the direction of the lower edge; the oftener it is folded the narrower the bandage becomes. Under this form a practical bandage is made, not only for wounds upon the neck, but also for those on many other portions of the body; for example, the eye, the forehead, the ears, the cheeks, the chin, and the lower jaw. It is employed in the same manner for the simple muscular wounds of the extremities, and for fixing the splints and other protective apparatus in the case of fractured bones; besides making all of it, as a sling for supporting the wounded arm. The manner of employing the bandage under this form is so simple that no particular description is necessary. The ends are well fastened by means of strong pins, or well knotted one with the other. For dressing a wound on the head, or a simple scalp wound, the bandage is placed upon the head in such a manner that the lower border will be brought directly across the forehead, the point hanging towards the neck. Then the two ends are passed backwards, behind the ears, turned again and tied in front. The point hanging in front is pulled down firmly, returned upon the head, and fastened on the top of the head with a pin (head bandage or cap).

"To bandage a wounded hand a small bandage is necessary. The hand is placed upon the opened bandage in such a manner that the wrist covers the middle of the lower edge, and the points of the fingers are directed to the pointed end of the bandage. The point is then turned backward over the hand in the direction of the forearm. The two remaining ends are crossed over the point of the bandage and tied on the other side of the wrist.

"For the foot the sole is placed on the middle of the bandage, so that the toes are directed towards the point. The point is then brought forward over the top of the foot and the two ends are passed around the malleolar processes, crossed on top of the foot and tied under the sole.

"We can also bandage the stump after amputation in the same manner. The superior border or biased edge is placed around the limb above the extremity of the stump, turned around the wound, the hanging point is brought up over the wound, and the two free ends are adjusted over these and tied.

"To comfortably sling or suspend a wounded arm the ends must be placed over the uninjured shoulder and upon the neck sufficiently in front so that it will readily pass around the neck to the other side, and it is there fastened, while the other end hangs in front of the body. We carefully place the bended arm upon the middle of the linen, advancing the point below the elbow several inches. Then the end which hangs before the arm is brought back to the side of the shoulder of the wounded arm and tied with the other end upon the back. Then the point is brought around the elbow and fastened with a pin. This bandage is called the large scarf or big sling bandage.

"For bandaging wounds upon the chest the middle of the linen is placed upon the chest, the point raised and turned backward, passing over one shoulder, and the inferior border adjusted (at the waist) in the region where the chest and abdomen unite; then bring-

ing the two ends backward and tying them together upon the back. The pointed end passed over the shoulder is then drawn down and made to pass under the knotted end, and adjusted by means of a pin or knot. For wounds on the back one proceeds in the same manner, but inversely. For wounds upon the shoulder the bandage is cut into two equal parts, of which one is folded in cravat form and is used as a little scarf for the forearm, whilst the other is placed upon the wounded shoulder in such a manner that the point shall be upon the side of the neck and the superior border upon the middle of the forearm. The ends are then passed around the under side of the arm, crossed beneath the point of the elbow, and tied together on the exterior surface of the forearm. The point of the bandage is then slipped under the scarf at the neck, plaited back upon itself and fastened with a pin at the top of the shoulder.

"In the same manner the bandage is placed upon the hip; and here we often need the entire bandage, because the upper part of the thigh is much larger than that of the arm. The inferior border of the bandage is passed around the largest part of the thigh, and the ends fastened with a double knot, but in the cases where the thigh is too large it is pinned. The point of the bandage is adjusted in the same manner as for the shoulder, by passing under the leather belt of the soldier, returned upon themselves and fastened with a pin. When there is no leather belt it will be necessary to use a second bandage folded in cravat form."

Everyone can be assured that in the manner detailed above our bandage outfit for wounds will prove satisfactory for first usage in the majority of cases of wounds. The essential thing, which is self-evident, is to have it constantly available, which is now easily accomplished, thanks to its available form. Consequently we recommend "our first aids" to all persons, as already mentioned. We recommend, also, to all large establishments, the packet containing the articles indicated as necessary to complete the outfit, which will be found invaluable when one has become accustomed to their use.

The International Manufactory of Bandaging Articles, at Schaffhausen, Switzerland. Articles to complete our bandage packet: cotton-charpie of Dr. Braus in packages three-fourth, one-half and one-eighth lb.; hydrophile bandage in packages of a yard and one-half to ten yards; triangular bandage with illustrations of wounded soldiers.

The two best works at present obtainable on this subject of ambulance corps organization are: first, "Manual for the Medical Staff Corps (British), War Office, 1885. Official Copy." This is a most valuable little work, is very suitable for our own Army, and should be reproduced here. The second is "Ambulance Handbook for Volunteers and Others," by J. A. Raye, Surgeon, and is published by Churchill, London.

These books are very important, and their completeness and admirable arrangement make them invaluable additions to the surgical library. During the War (1863), Dr. Ordronaux published a valuable little work entitled "Hints on Health in Armies." It is for sale at present by Van Nostrand, 192 Broadway, New York, and contains very valuable recommendations on military hygiene. Surgeon Woodhull's (U. S. A.) able article on "Military Hygiene," in the "Reference Handbook of the Medical Sciences," vol. iii, just published, contains the latest military medical science. I mention these writings on military hygiene because it is essential that they should be studied by all military surgeons, and because they contain valuable information for all medical men who are likely to have anything to do with military medical matters.

Three other works are in process of preparation or have been already published: Surgeon-General Langmore's work on "Transport, etc., of Sick and Wounded;" Surgeon Moore's "Manual of Drill for the Army Hospital Corps;" and Surgeon-Major Evatt's "Ambulance Organization Equipment and Transport." Another very important work in this connection, by Dr. Paul J. Möbius, Surgeon in the Saxon Army, entitled "Grundriss des Deutschen Militair-Sanitätswesens," has been translated, and will soon be published in this country, but in an abridged form.

This important subject has received comparatively little attention from the medical press, but the *Boston Medical and Surgical Journal* has done much to awaken interest in the matter, and from time to time valuable editorials and items have appeared in its columns. This has come about, no doubt, in consequence of the enterprise shown by the Surgeon-General's Office of Massachusetts, which has, without doubt, led in this matter, and has accomplished more in ambulance drill than all the organizations in the country.

The following editorial, in the *Boston Medical and Surgical Journal* of September 23, 1884, is well worth reproducing, and should strongly appeal to any officers interested in this important branch of the military service:

"It is generally understood that a militia should be a school of instruction for the men, and the public expect the development of a nucleus from which can grow, in case of necessity, an effective body of soldiers. Now, it is a well-known axiom that familiarity and experience with any work are necessary for its best accomplishment; therefore the training of an ambulance bearer corps should form part of the duty of the volunteer militia. Properly instructed and drilled, this body would form a unit from which might spring in time of need a service of the greatest importance."

Volunteer ambulance bearer corps have recently been instituted at the various military camps in England, and great success and popularity have attended the efforts of those who have had charge of this important undertaking. This has been attempted in our own country, especially in Massachusetts, but has so far been considered a failure. It must be expected that great difficulties will be encountered at first, but each trial faithfully made makes success in the end more certain. Development goes on slowly in healthy action—the militia system itself demon-

strates this fact. During the War, when one would have supposed that the plan would have secured prompt encouragement, efforts to establish an ambulance corps failed, and a bill for this purpose perished in the Senate, having received the discouraging and utterly unsound endorsement of the Committee as "*an impracticable measure at this time.*"

I quote again from the same journal: "Modern warfare has reached a stage of perfection in which results are rapidly accomplished, and this is undoubtedly due to the development of arms which can be used with rapidity and precision, the mobilization of troops, and their rapid and machine-like movements. Modern warfare has brought into use the railroads, telegraphs, massive steel cruisers, and new explosives. When we consider that with the improved Gatling and Nordenfelt ten barrel guns a thousand shots can be fired in each minute, as was actually done in the Soudan, we see that a large number of combatants can be rapidly disabled. This increase in destructive power creates an increased necessity for means of caring for the injured. Unfortunately, however, military commanders have generally considered the care of the wounded as a minor consideration, and only in recent years has it dawned upon such officers that the certainty of good care in the event of misfortune develops in men an *ésprit de corps* second only to the accomplishment of victories. Again, the certainty of good care and attention, in case of injury, softens the anxiety of those who part with their loved ones for the national defense. This home feeling forms the foundation of the moral support on which commanders at times lean so heavily, and without which supplies of men and materials to carry on their campaigns would be wanting. The lamentable failure of men to receive proper medical care in the Crimea early drew attention to the defects of the old system of caring for the disabled. It was only when Letterman, in our Civil War, developed gradually an ambulance system (which at the close of the War was quite effective), that the necessity for sure, rapid, and effective treatment and transportation of injured combatants was properly appreciated. Many will remember the heart-rending tales of the needless suffering in transportation inflicted on our soldiers in the early part of the Civil War. Needless, because this exigency of warfare should have been foreseen and provided for.

"At Aldershot, a few weeks since, a detail of a hundred men, acting as wounded soldiers, were searched for at night, after a supposed battle, by the aid of an electric light carried by a bearer company of the army hospital corps, with all the paraphernalia of transports complete. The application of the electric light was a distinct success, the necessary dressings of the wounded being performed with accuracy and dispatch.

"An attempt was made at one of the recent annual encampments of the Massachusetts militia to instruct the men in the treatment of emergencies; owing, however, to a variety of causes the trial was a failure. This was due, in a great measure, to the amount of tactical instruction and drill required of the men. The topics considered were of general interest, but the men showed a lack of appreciation because of these conflicting duties. It was also found impossible after "retreat," the men requiring amusement at that time rather than instruction and hard work. Now, while a general knowledge of the principles of sanitary science, as taught German officers, is of importance, we feel that in time of war the rapid treatment of wounded combatants demands the training of brave and intelligent men for this important work. We hope that there will soon be an ambulance bearer corps connected with the various State militias, under the control of the Surgeon-General of the State. A company should be connected with each brigade, under the direction of the medical director, and this company should be composed of enlisted men, having the proper number of sergeants, corporals, and privates. A number of such a bearer corps should be medical students, as it is self-evident that by the discipline of such a service they would be better fitted to act after graduation as medical officers of the volunteer militia.

"Major-General George B. McClellan appreciated the necessity for an ambulance corps. In a letter dated February 21, 1863, addressed to Henry I. Bowditch, M.D., in answer to the question, 'Should the men in the ambulance corps be detailed soldiers, taken from time to time from the ranks, or should they be men enlisted for the purpose and taught their especial duties?' General McClellan answered as follows: 'There are many self-evident objections to the system of taking men temporarily from the ranks for this duty; they need instructions in their peculiar functions as well as the ordinary discipline, and should have distinctive uniforms. I am of the opinion that men should be enlisted especially for duty in the ambulance corps.' Dr. Bowditch asked also the following question: 'Do you think the establishment of such a corps would increase the the number of non-combatants?' McClellan's answer is: 'I think it would decrease the number of non-combatants, especially during battles.'"

Besides the evident value of preparing soldiers to administer intelligently first aid to the injured, some effort should be made to instruct train hands in this necessary work. "Every guard's van of every passenger train should carry a stretcher and a basket of bandages and restoratives. Every railway station should have a stretcher as part of its equipment; and every 'break-down' train sent to aid at accidents should include a regular sick transport wagon, containing dressings, restoratives and stretchers." Our recent frightful railway accidents prove this clearly.

It has been the purpose of this paper merely to act as a skirmisher in the great battle which must sooner or later take place, to decide what is useful and practical for the soldier's welfare, and what should be discarded. Prominent army officers are very apt to be conservative, and really important inventions are often put aside because they interfere with the old romantic ideas of generations past.

The object of this paper has been attained if I have emphasized the importance of "First Aid to the Injured," which in military life must develop into organized ambulance and stretcher corps.

The books I have mentioned will give more information on the subject than any others yet seen by me. The English books especially are of the greatest value, and for those medical officers of our regular and volunteer army who are about to carry out the provisions of the general order referred to will be found of remarkable assistance and practical usefulness. The subject is of national importance, and unites with the highest humanity practical economy of human lives. There should be no delay in organizing for such an important movement in the history of the U. S. Army.

Newport, R. I., February 22, 1887.

BIBLIOGRAPHY.

Hints on Health in Armies—for the use of Volunteer Officers. John Ordronaux, M.D. D. Van Nostrand, Publisher, New York.

Manual for the Medical Staff Corps, Official Copy, War Office, 1885. W. Clowes & Sons, Charing Cross.

Ambulance Handbook for Volunteers and Others. J. Anderson Raye, Surgeon L. I. Rifles. J. & A. Churchill, London.

Grundriss des Deutschen Militair Sanitatwesens. By Paul J. Möbius, Asst. Surgeon Royal Saxon Sanitäts-Corps.

Reference Handbook of the Medical Sciences. Wm. Wood & Co. Surgeon A. A. Woodhull, U. S. A., article on Military Hygiene.

Dr. Porter's Surgeon's Handbook.

REMARKS ON CATARACT EXTRACTION.

Read before the Medical Society of the District of Columbia, Feb. 23, 1887.

BY SWAN M. BURNETT, M.D.,

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Since the opening of the Garfield Memorial Hospital about two years ago, I have made twenty-five extractions of senile cataract. The number is not large, but the cases have been of such a character as will very properly serve as a basis for a few remarks on some of the mooted questions concerning this most important surgical operation.

The extraction in every case was effected through an upward incision in the cornea, made in accordance with the plan of De Wecker; that is, the upper third of the cornea was detached from the sclerotic, the incision lying wholly in the transparent tissue. Sometimes a flap of less magnitude was formed by the apex of the incision lying farther from the scleral border than the base, but this was only exceptional, and experience shows that it has no essential advantages over the incision as perfected by De Wecker and now very largely adopted by operators who have not originated some special plan of their own. In no case was the incision placed so peripherally as in the method introduced by Von Gräfe.

This incision of De Wecker seems to steer us as safely through the straits between the Scylla of corneal suppuration, and the Charybdis of iritis and cyclitis as could be reasonably hoped for. It gives an opening sufficiently large for the easy delivery of even the largest nucleus, and the lips of the wound adapt themselves as perfectly and with as little danger of gaping as in the so-called linear incision of Gräfe. This incision offers yet additional advantages over the Gräfe linear, in that it enables us to make the extraction without an iridectomy. It seems therefore, that as far as the form and position of the incision are concerned, it is hardly possible for us to go farther towards perfection.

In ten of the cases the *extraction was made without an iridectomy.* This method, practiced largely, indeed almost without exception by the French, is struggling for a foothold in this country, with however, I believe but only a moderate chance for immediate adoption. Certainly an eye with a central movable pupil is on all accounts to be preferred to one with a large coloboma in the iris, but it is equally certain that even in the hands of the most skillful this is not to be attained in all cases in operating without an iridectomy. In a rather large minority there will be prolapse of the iris. It is an operation demanding rather more skill in its performance and requiring more quiet and repose on the part of the patient for the first forty-eight hours after the operation than with an iridectomy. And yet it is an operation that I think should be cultivated, because I believe we shall in time be able to master most of its disadvantages. I attempt it in every case in which there is no marked increase in the tension of the eye-ball, and when the anterior chamber is reasonably deep. Under these conditions, with a moderately docile patient, I do not greatly fear a prolapsus of the iris. And, moreover, should the iris refuse to return after the delivery of the lens, with a moderate amount of coaxing, it is as easy to make excision of the iris after as before the exit of the lens, thus converting it into an ordinary extraction with an iridectomy. I do not find that delivery of the lens is any more difficult than with iridectomy, and I believe the danger of prolapse of the vitreous is less, since there is not so great a liability to rupture of the zonula.

The possibility, however, of prolapse of the iris after it has been once returned cannot always be guarded against, even by the use of eserine. Here everything depends upon the accurate coöperation of the wound, and an early and persistent adhesion of its lips. A perfectly proper incision is therefore one of the first requisites for success in this method. This comes of skill and experience; but the second requisite—perfect rest of the eye for forty-eight hours—can never be counted on; for even the quietest patient, during sleep may make a sudden movement of the eye which will open the wound, when the aqueous humor will gush out, carrying with it the iris which remains thereafter fixed in the wound.

In *two cases* extraction was made *with the lens in its capsule.* In these cases an iridectomy was first made, since extraction in the capsule is much easier thus than with the iris entire. In both cases the result was perfect, and there was no escape of vitreous following the exit of the lens. In one instance it was done on account of a thickened and tough capsule; the other case was one of "black" cataract and it was desirable, for the purposes of investigation, to remove the lens in the capsule.[1]

[1] A detailed history of this case and a consideration of the subject of black cataracts and their diagnosis is to be found in a clinical lecture published in the Medical News, Jan 29 1887.

In one instance only was a *preliminary iridectomy* made. This method, which has been brought again to the notice of the profession of late years, principally through Förster, of Breslau, has something to recommend it in a certain class of cases of which ours is typical. It was in an old man of near 80 years, the cataract was maturing slowly, the anterior chamber was very shallow, the pupil responded but feebly to light and mydriatics, and there was a chronic conjunctivitis due to an epiphora caused by a falling away of the puncta from the globe as a consequence of general laxity of the lid tissues. Such a case is not adapted for extraction without an iridectomy. I therefore made an iridectomy and rubbed the cornea against the capsule with the round corner of a strabismus hook according to Förster's recommendation. The result was a rapid maturing of the cataract which was successfully extracted three weeks later without any unusual complications. The making of such a preliminary iridectomy very much diminishes the danger of an operation in suspicious cases, since it divides the risk between the two operations, though it has happened to me to lose an eye from such a preliminary operation some years ago.

The ideal operation for cataract is without an iridectomy, and with the lens in its capsule—and some operators have confined themselves quite closely to such methods. Prof. Roosa, of New York, is at present, I believe, practicing an operation of that kind, and his statistics certainly recommend it to the further trial, but the conservative spirit of ophthalmic surgeons is very adverse to making any such radical departures from methods which give only about 6 per cent. or 7 per cent. of losses in ordinarily skillful hands. And yet I think it can be safely predicted that in the probably near future more tentative efforts will be made in that direction. In a progressive art like ophthalmic surgery no stop will be made short of as nearly absolute perfection as positive science and the greatest operative skill will allow us to attain.

In twenty-one of the cases *cocaine* applied locally *was the anæsthetic used.* The strength of the solution was 4 per cent., and no evil effects that could be referred to its employment were noted. A concurrence of testimony, however, seems to point to a possible danger from its too long employment in strong solutions. Cocaine undoubtedly has a tendency to cause a loosening of the epithelium of the cornea, thus furnishing a nidus for any pyogenic germs that may gain access. That it is, of itself, in any way deleterious I do not believe. After every instillation of the drops I cause the patient to close the eyelids, and in this manner it is believed the peculiar effect on the corneal epithelium is avoided.

In all the cases a certain amount of *antiseptic precaution* was used, but in the last eleven those of the strictest nature were adhered to. The conjunctival sac was thoroughly washed out with a solution of mercury, 1 to 25,000. made according to the formula of Panas, of Paris; the instruments were laid in absolute alcohol; the lids, brow and neighboring parts of the face were washed with a carbolic acid solution, and the dressing applied next the eye after the operation was saturated with the mercuric solution.

In the cases in which an iridectomy was not made, it was attempted to *return the prolapsed iris* by rubbing the upper lid gently over the incision, but where that was not sufficient a small Bowman's probe, dipped in the antiseptic solution was used to reposit the membrane. A solution of *eserine* was then instilled into the conjunctival sac, and in the latest cases even into the anterior chamber, thus bringing the drug in direct contact with the iris-tissue and ensuring the strongest possible contraction of the pupil. In some instances where there were remains of corticalis, the anterior chamber was even washed out with the biniodide solution. This going directly into the anterior chamber is an innovation of quite recent origin. Confidence in antisepsis has made us bold, and we now handle tissues fearlessly which before we touched only with trembling.

So far as my experience goes, this treatment of the iris and anterior chamber is not followed by any evil results, and it gives us two important factors necessary for a perfect healing—a well contracted pupil, and a clean aqueous chamber.

Within the last twelve months a great deal has been said about the "new" and "rational" *after treatment* of cataract operations—the method being claimed as "original" by several parties. The method consists in abolishing dark rooms and doing away with cumbersome bandages. For eight years I have not confined an operated case in a room in which it was too dark for the nurse to read the directions given by the surgeon. That relic of barbarism I discarded because it seemed to me both irrational and pernicious; irrational, because in only exceptional cases is light in moderation hurtful, while on the contrary, in most instances, it is of a decided advantage in keeping up the normal relation between the internal eye and its natural stimulus; pernicious, because I believe light, whether felt by the eye or not, to be as important to the well-being of man as good air, and I am myself too keenly alive to the blessed, vivifying influence of light to exclude it from persons who from age or decrepitude need all the sustaining power they can get. To enter the rooms of some ophthalmic institutions is like going into a dungeon. All these cases were treated in the open wards of a general hospital with abundant supply of light.

In regard to the matter of bandages, I do not go to the length of some in discarding them altogether, nor do I think such a course advisable. I do not use the flannel roller generally employed, for it is exceedingly hot and uncomfortable in summer, is easily disarranged, and the ordinary nurse cannot replace it when it becomes so. It seems to me also that an adhesive plaster applied over the lids would be very stiff and uncomfortable and would not afford as much protection against the accidental rubbing of the eye by the hands during sleep as the more elastic absorbent cotton. The bandage I use is a band of elastic flannel 2½ by 6½ inches, with a tape secured to each of the four corners, sufficiently long to pass around the head and come again to the front to be tied on the forehead.

After the operation is completed and the eye is disinfected, a thin linen or cotton cloth, saturated

with an antiseptic solution, is placed over the closed lid, the orbital cavity filled out to the brow with absorbent cotton and the bandage applied, and the tapes, passing above and below the ears, are brought around to the front and tied in the centre of the forehead. This bandage is easily removed and the lids can be inspected and washed—which is often very grateful to the patient—without opening the eye. The lids are always thus inspected at the end of the first twenty-four hours, or earlier, if there were symptoms demanding it, but the eye is not opened if there is no marked swelling of the lids. It takes at least forty-eight hours for the union of the lips of the wound to be firm enough to bear any considerable movement of the ball without danger of reöpening. At the end of the second day the lower lid is pulled down, and if there is no marked chemosis of the conjunctiva the bandage is replaced. At the end of the third day the corneal wound is inspected, and atropine drops applied.

The *operation* was not *complicated* in a single case, if we except a slight prolapse of vitreous in two cases, and a falling of the iris before the knife in one, necessitating the making of an iridectomy where none had been intended. The *healing* was smooth and uninterrupted in all but eight cases. In two there was reöpening of the corneal wound one week after the operation; in four severe iritis supervened; in one there was hæmorrhage into the vitreous, and in one there was suppuration of the cornea. In one of the cases the patient, a colored woman of 70 years, was seized with *mania* on the third day, and tore the bandage from her eyes and was with difficulty controlled for the next four days. Similar cases have been reported before, and it is a question as to whether it is due to the bandaging and confinement, or to the atropine which had been used. This patient had had atropine applied but once, and the mania continued though the drug was not applied again. So far as we could learn the woman had never before manifested any symptoms of this character. The corneal wound healed nicely, but a plastic iritis obstructed the pupil to such an extent as to render a secondary operation necessary. With that, however, her vision will be good.

As to *results*. There was complete primary success in twenty-one cases; in two good vision can be obtained by a secondary operation, and two eyes were lost. One of the eyes was lost by hæmorrhage into the vitreous caused by vomiting six hours after the operation. The vomiting was caused by the anæsthetic (A. C. E. mixture), it being in the præ-cocaine days. I have lost two eyes from this same cause, the other being some four years ago, and embodied in my last statistics.[2] Had I had the invaluable cocaine then, I believe those eyes could have been saved.

Of the ten cases without an iridectomy, there were only four in which there was an adhesion of the iris to the corneal wound, and in one of these, the patient—a mentally debilitated man—tore the bandage from his eyes and walked about the ward within the first twenty-four hours. When discovered by the nurse, the corneal wound was gaping wide and filled with prolapsed iris. The prolapsed portion of the iris was cut off, but inflammation of the iris set in leaving closure of the pupil as the result. With a secondary operation, however, his vision will be fair.

The loss of the eye from suppuration is of interest, as the operation was done under the most approved antiseptic method, and because the operation on the other eye, done some eight months previously but without such strict precautions, was perfectly successful, there not having been even a single unpleasant symptom after the operation. The first operation was done with an iridectomy, the last without. The operation itself was as smooth as it is possible for an operation to be. The incision was accurately placed, the lens delivered without any difficulty, and the iris returned with only a slight rubbing of the upper lid; and when the eye was closed for bandaging the pupil was central and round, and the wound was coäpted. And yet, at the end of twenty-four hours the lips of the wound were thickened and yellow, and there was a small quantity of pus on the cloth dressing next the eye. The infiltration rapidly increased, and by the next day the whole of the upper half of the cornea was involved. The bandage was removed on the first appearance of signs of suppuration, and it was vigorously combated by atropine, frequent washings of the eye with the mercuric solution, and dusting the cornea with powdered iodoform. To this prompt treatment we believe is due the arrest of the suppurative process at the end of the fifth day, though not before the upper third of the cornea had been lost. The remaining portion of the cornea is so opaque as to render any operation for restoration of vision futile.

This case is somewhat discouraging to the enthusiast for antisepsis, and advocate for the microbic theory of suppuration. I, of course, will not deny positively the absence of pyogenic microbes, but I do affirm that I used all the precautions that the most ardent antiseptist recommends; and though the majority of facts, clinical and experimental, seems to support the microbe theory, the final word yet remains to be said in regard to the cause and origin of suppuration. It seems to me that the cause cannot be altogether external. The general condition of the patient must not be excluded in settling the question of etiology. It is, I think, an important fact in this connection that this patient, on the tenth day after the operation, was attacked with facial erysipelas on the side of the operated eye, and nine days later a milder attack occurred on the other side. I will also state, as bearing on the same point, that in the thirty-four extractions recorded in my last statistics (l. c.), there were two suppurations of the cornea, both in women broken down in health and with little vitality, one having been bed-ridden for years, and the other dying in less than a week after the operation.

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[2] Comparative Frequency of Eye Diseases in the White and Colored Races in the United States. Archiv. of Oph., vol. xiii, No. 2, 1884.

THE SEASONAL RELATIONS OF CHOREA, RHEUMATISM AND NEURALGIA.

Read before the Philadelphia County Medical Society, on March 23, 1887.

BY MORRIS J. LEWIS, M.D.,

OF PHILADELPHIA.

I have been requested by your committee on meteorology and epidemics to read a paper on the influence of different conditions of weather on rheumatism and nervous affections, and take pleasure in doing so, but must state that the paper read by me before the Philadelphia Neurological Society, in October, 1886, which appeared in the *Medical News*, of November 13, 1886, embodies nearly all the facts that I have to bring before you to-night. The salient points, however, I think I can bring forward in a clearer manner than then, having changed the method of tabulation so as to make the subject more easily comprehended.

A *daily* comparison between the states of the weather and disease could not be made, as the *days of onset* of the two affections, chorea and rheumatism could not be obtained. The *months of onset* were, therefore, taken and compared with the *monthly* average of the weather, this, although rendering the result less accurate will, however, show many points of interest, the study extending over the decade 1876–1885 inclusive.

The months of onset of 437 separate attacks of chorea were taken from the books of the Orthopædic Hospital and Infirmary for Nervous Diseases during this decade; and attention is drawn to the fact that it is the time of onset of the disease that is noted and not the time of application for treatment; any conclusion drawn from the latter method of notation must necessarily be inaccurate. As it is a well-recognized fact that a relationship exists between chorea and rheumatism, which it is needless to say, is as yet imperfectly understood, I thought it would be of interest to compare with the cases of chorea the months of onset of attacks of acute and inflammatory rheumatism, and for this purpose studied the notes taken at the Pennsylvania Hospital, which were placed at my disposal; from these were collected 467 separate attacks of acute rheumatism which occurred during the years in question, all cases being excluded that were at all doubtful, together with those that did not originate in this city: this, of necessity, excludes nearly all the cases occurring among sailors.

To compare neuralgia with these two affections, I have extracted from the article by Captain Catlin, on "The Relation of Pain to Weather" (read before the College of Physicians in June, 1883, by Dr. S. Weir Mitchell), the hours of pain per month for the period of his study, of his own case, from 1875 to 1882 inclusive; but, unfortunately, Captain Catlin was situated at West Point, and the years of study do not coincide, and, therefore, for a better comparison I have prepared a table in which the first year of the neuralgia record (viz., 1875) and the last three of my records of chorea and rheumatism (viz., 1883–84–85) have been expunged, this then includes a period of seven years, 1876–82 inclusive, in which the two studies coincide, except for locality.

The weather statistics were compiled from the records kept at the Signal office in this city, and consist of a study of the temperature, range of the thermometer, barometer, relative humidity, amount of rain and snow in inches, number of cloudy and rainy days, and the number of storm centres (centres of low barometer) passing within circles of varying radii drawn around Philadelphia as a centre.

The monthly average of the weather being thus studied for ten years was then taken and compared with the monthly average of disease; but the peculiarities about to be spoken of, are best seen when a table is made which shows the mean of the ten years in question, month by month.

It must be borne in mind that while the records of the weather are complete so far as they go, the cases of disease here reported are but a small portion of those that must have occurred in this city during that decade; the neuralgia record is an exception, as it is a complete record at least of the sufferings of one person. The 437 attacks of chorea are distributed among the twelve months of the year as follows:

January,	36 attacks	= 8.2	per cent.
February,	33 "	= 7.5	"
March,	67 "	= 15.3	"
April,	38 "	= 8.6	"
May,	47 "	= 10.7	"
June,	40 "	= 9.1	"
July,	46 "	= 10.5	"
August,	34 "	= 7.7	"
September,	27 "	= 6.1	"
October,	18 "	= 4.1	"
November,	19 "	= 4.3	"
December,	32 "	= 7.3	"

The 467 attacks of rheumatism are distributed as follows:

January,	50 attacks	= 10.7	per cent.
February,	44 "	= 9.4	"
March,	45 "	= 9.5	"
April,	81 "	= 17.3	"
May,	48 "	= 10.2	"
June,	32 "	= 6.6	"
July,	28 "	= 5 9	"
August,	26 "	= 5.5	"
September,	29 "	= 6.2	"
October,	28 "	= 5.9	"
November,	24 "	= 5.1	"
December,	32 "	= 6.6	"

To compare the relative frequency of neuralgia per month with these records, I have had recourse to the unique study of the relation of pain to weather by Captain Catlin, previously mentioned.

The total amount of pain for the eight years ending January 1, 1883, was 12,994 hours, or nearly one-fifth of the time.

The winter months hold the advantage as pain producers, and for this period, while the sun was north of the equator, there were 6783 hours, against 6161 hours while it was south of the equator.

The hours of pain were distributed among the twelve months as follows:

January,	1220	hours	= 9.4	per cent.
February,	1084	"	= 8.3	"
March,	1234	"	= 9.4	"
April,	1062	"	= 8.1	"
May,	1089	"	= 8.3	"
June,	947	"	= 7.2	"
July,	997	"	= 7.6	"
August,	1060	"	= 8.2	"
September,	1006	"	= 7.7	"
October,	1038	"	= 7.9	"
November,	1104	"	= 8.4	"
December,	1153	"	= 8.8	"

In glancing over these figures, great variation in the number per month is seen; the two highest months for chorea being May and March respectively, and the two lowest being October and November; while for rheumatism, the two highest are January and April, and the two lowest November and August.

The highest month for rheumatism follows the highest month for chorea, instead of preceding it, as we might have been led to suppose from our knowledge of the relationship between these two affections, although a considerable rise is seen in the number of attacks of rheumatism in January, two months before the greatest rise in the number of chorea cases.

The greatest suffering from neuralgia occurred in March, and the least in June. An attempt to explain these variations, naturally brings us to a study of the varying conditions of the weather.

Nothing especial is seen in comparing with the chorea tracing (tabulated from the foregoing figures) that of the *mean relative humidity*, (and by this is meant, not the *mean actual amount* of moisture contained in the air, but the *mean per cent.* of the moisture that could he held in suspension at the mean temperature of each month) or that of the mean barometer, except that there appears to be an increase in the number of attacks of chorea with a fall in these two tracings; the reason for this will appear later; neither is much learned by comparing the chorea tracing with that of the mean daily range of the thermometer, which shows the variableness of the different months; this is greatest in May, and least in December. The mean temperature tracing which is highest in July and lowest in January, does not throw much light upon the subject. When, however, the tracings of the number of the cloudy days, and the days on which rain or snow fell, and the amount of rain, or melted snow in inches, are studied, a slight resemblance to the chorea tracing begins to be apparent, and the probable cause of this becomes more evident when the storm tracings are studied, because these meteorological factors may be considered as component parts of a storm. The cause of the relationship previously noted as existing between the chorea, and the mean relative humidity and mean barometer tracings, now becomes clearer, the storm centres being centres of low barometer.

In studying the storms, circles of varying radii were drawn around Philadelphia as a centre, and the number of storms, as marked on the weather bureau maps, counted in each.

The storms passing within the 400- and the 700-mile circles are the only ones I will discuss; the former because it shows the nearest resemblance to the chorea tracing, and the latter, because the average distance over which a storm can influence neuralgia has been found by Captain Catlin to be about 700 miles. A very strong resemblance exists between these two storm tracings.

The smallest number of storms passing within the 400 mile circle occurs in August; a rapid rise of the tracing then takes place, until December and January are reached, then there is a slight fall in February, immediately followed by a rise to the highest point in March, after which there is an irregular fall until the low point in August is reached. The total number of storms passing within this circle for the ten years in question, is 520, and they are distributed as follows:

January,	60	storms	= 11.5	per cent.
February,	54	"	= 10.3	"
March,	75	"	= 14 0	"
April,	46	"	= 8.8	"
May,	41	"	= 7.8	"
June,	28	"	= 5.3	"
July,	34	"	= 6.5	"
August,	19	"	= 3.6	"
September,	24	"	= 4.6	"
October,	32	"	= 6.1	"
November,	47	"	= 9.0	"
December,	60	"	= 11.5	"

Any one comparing a tracing made from these figures with that of chorea, must be struck by the resemblance between the two, which is more than accidental.

While the chorea tracing shows a strong tendency to keep pace, month by month, with the irregularities of the storm tracing, that of rheumatism, while also strongly resembling the latter in its general characteristics, may be seen to be almost exactly *one month later*, looking as if the effect of the meteorological changes was immediate in the case of chorea (as will be seen later to be the case with neuralgia), and preparatory only in the case of rheumatism. A marked resemblance exists between a tracing made from the hours of pain per month previously mentioned, and the storm tracings, even when the years of study do not coincide; when, however, a table is prepared for the years 1876–82 inclusive, during which the studies do coincide, the great resemblance becomes manifest; this is most marked with the 700 mile, and less marked with the 400-mile tracing, although still pronounced.

It would be interesting to know how many nervous disorders are thus immediately influenced by the weather, and in how many others are the meteorological changes to be looked upon as preparatory to the outbreak of the disorder. The hot weather of July has been shown to precede the month of onset of the greatest number of attacks of infantile palsy.

A similar study in the case of epilepsy, hemiplegia, and many other affections might open up much that is new.

TABLE SHOWING THE FIGURES FOR CHOREA, RHEUMATISM, NEURALGIA AND THE 400- AND 700 MILE TRACINGS FOR THE YEARS 1876-82, INCLUSIVE.

MONTH.	No. of attacks of chorea.	No. of attacks of rheumatis a.	Hours of pain.	Storms passing within 400-mile circle.	Storms passing within 700-mile circle.
January	32	44	1018	44	76
February	16	27	918	38	67
March	50	34	1045	55	76
April	24	54	932	33	58
May	27	35	907	25	46
June	28	18	827	21	42
July	30	13	875	25	38
August	21	16	885	15	41
September	16	18	901	19	43
October	14	16	903	21	49
November	10	15	914	32	43
December	17	17	977	47	71
Totals	280	295	11,352	375	650

MEDICAL PROGRESS.

SALICYLIC ACID IN CHANCROID.—The use of salicylic acid in the therapeutics of soft chancre has been recommended by various authors. Dr. Giuseppe di Bella, in a report of cases treated in the clinics of Drs Monteforte and Santi-Sirena, says that this agent has acted promptly and efficaciously in a large number of cases. Hebra has seen a number of cases of chancroid cicatrize in a very few days under treatment by salicylic acid. Dr. Ping y Falco has also obtained most satisfactory results with this same agent in similar cases. DR. A. FARRIOLS ANGLADA reports in the *Gaceta Médica Catalana*, of October 15, 1886, thirty-two cases of soft chancre in which salicylic acid was used with the happiest results. This method, he says, possesses many advantages over the others hitherto used, and especially over the abortive plan. It is very simple, and the patient himself can carry it out; it is only necessary to wash the chancroid with some antiseptic fluid, and then to dust it with finely pulverized salicylic acid. In the great majority of cases, no more than two applications in the twenty-four hours are required, and in a few days (four or five, according to the author's experience) the ulcer loses entirely its specific characteristics. When this result has been obtained, that is, when the lesion has been converted into a simple ulcer, the applications of salicylic acid should be suspended, and a carbolic acid lotion or boracic acid ointment employed. Under this treatment, the ulcer becomes covered with healthy granulations, and cicatrization proceeds with great rapidity. Finally, Dr. Anglada urges, if we bear in mind that salicylic acid causes hardly any pain or inconvenience of any sort, in this way differing so greatly from the caustics ordinarily employed, we are forced to admit that it is a most valuable therapeutic agent in the management of soft chancres.—*Journ. Cutan. and Genito-Urin Diseases.*, February, 1887.

EFFECTUAL DISINFECTION OF UTERINE TENTS.—DR. DIRNER, of Buda-Pesth, has recently written in the *Centralblatt für Gynäkologie* on the effectual disinfection of tents used for gynæcological purposes. He observes how, after the greatest precautions, serious pelvic inflammation may follow the introduction of sponge or laminaria tents. This accident is clearly due, not to the mere ulceration of the dilated structures, but to the introduction of septic material through the wounded mucous surface. The preparation of tents by soaking or coating in antiseptic media is insufficient. Septic matter may be introduced with the aseptic tent; surgeons handle and throw about samples at the shops, nor is the process of manufacture always properly superintended. Fritsch's method of coating tents with wax requires warm water to be at hand when the wax has to be melted, and that water may be septic. Dr. Dirner has detected cracks in the wax, allowing the admission of dust. The most carefully prepared dry tents can convey septic germs on their surfaces. For a year Dr. Dirner has employed in Professor Tauffer's wards a special system of disinfecting laminaria tents. He immerses them in a 1 per cent. solution of corrosive sublimate in absolute alcohol contained in a wide-mouthed bottle, When required, a tent is taken straight out of the solution and passed into the canal of the cervix, the patient being previously placed in the semiprone position, and the vagina disinfected. He takes care to inspect hollow stems before introduction, and should any crystals of sublimate be detected in the channel of a stem, it is dissolved with pure water. The results of this practice have been admirable, and he has seen no bad effects follow the introduction of the disinfected tents; provided that absolute alcohol be employed, the expansive power of the laminaria is in no way damaged.—*British Medical Journal*, March 5, 1787.

PERIOD OF INCUBATION OF HYDROPHOBIA.—BAUER, in a careful study of 510 cases of hydrophobia in man, in which the length of the period of incubation was positively and reliably known, arrived at the following conclusions:

The average duration of the period of incubation was in men eighty days, in women sixty-five days, in children fifty-seven to, in the strongest, seventy to seventy-five days.

The location of the wound influenced much the length of the period of incubation. Bites on the head or neck, or numerous teeth wounds about the body, produced an average period of fifty-five days; wounds of the lower extremities, a period of seventy-four, and of the upper, 81.5 days.

The period of incubation from wolf bites averaged thirty-nine days; from dogs, 73.5, from cats, eighty days.—*Centralblatt für klinische Medicine*, January 8, 1887.

PASTEUR states that the average period of incubation is from forty to sixty days when the bite is by a dog; and when by a wolf, thirty to sixty days, or less.—*Bullet. de l'Acad. de Méd.*, March 2 and May 4, 1886.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, APRIL 9, 1887.

BACTERIA IN ICE.

At the last stated meeting of the New York Academy of Medicine, in March, DR. T. MITCHELL PRUDDEN read a paper of great interest, denoting more original research than any contribution to the Academy for some time past, on "Bacteria in Ice, and their Relations to the Ice Supply of New York City—an Experimental Study." His object in the series of investigations was to give by experimental means definiteness and precision both to the problem in general, and to the detailed questions which arise in connection with the ice supply of one particular town. His valuable studies enable us to know now with tolerable certainty just what series of questions are to be answered, and what investigations are to be made, in order to decide upon the safety of any given source of ice supply. These detailed investigations, however, as he said, can only be made under the sanction and direction of the public authorities. In the clear light which new methods of science throw upon the whole subject of ice impurities, it seems necessary that a sweeping reform, in some respects, should speedily be brought about.

Even after we have determined the number of bacteria present in water or ice, a careful consideration of other conditions is still imperative, in order to determine whether the water or ice is fit for use. The popular impression that water purifies itself in freezing is only partly true, so far as the bacteria are concerned. The partial purification from bacteria is accomplished, not by their expulsion from the water, but by the death of a certain proportion of their number, so that, if the bacterial contamination of the water be extensive, or even largely made up by the more hardy species, the ice formed from it, even though quite transparent, may still contain large numbers of the living germs. The experiments showed that bacteria of different species possess different degrees of vulnerability to the action of low temperatures. Certain species which are capable of producing serious and even fatal diseases in man—the bacillus of typhoid fever and the common bacillus of suppuration, for example—are capable of resisting a prolonged low temperature, with the destruction of only a part of the individuals thus exposed. In the case of the typhoid fever germ the exposure was for seventy-seven days. The resisting capacity of the different species was found to vary with the vitality of the individuals, the degree of temperature, and the time of exposure; while alternate freezings and thawings sufficed to entirely exterminate in a short time all species experimented on, even those which can endure for long periods a sustained low temperature. The data gathered seem to justify Dr. Prudden in the conclusion that in the freezing of natural waters there may be a precipitation amounting to as much as 90 per cent. The effect of freezing on water containing bacteria was comparable, he said, to that of filtration, but with this vital difference, that whereas by filtration all forms of bacteria are removed in approximately equal ratio, by freezing, which acts as a sort of selective filtration, some of the most dangerous forms may be retained while others are destroyed.

The ice supply of New York City is principally derived from a series of naturally excellent lakes and tanks and from the Hudson River; the latter being by far the most important source. The Hudson River ice is obtained between Troy and Poughkeepsie, and in the upper portion of this region the stream receives the entire sewage of Troy and Albany, to say nothing of that of many smaller places, and the contaminations brought from the west by the Mohawk River. Here, then, is a great tidal river rich in sewage pollution; but, while the conditions in the upper Hudson during the ice-forming season scarcely seem to be such as would favor purification from organic matter by oxidation, they do seem to be theoretically, and are shown to be practically, favorable to a considerable degree of spontaneous purification from bacteria by sedimentation.

In regard to the actual analysis of the ice brought from the Hudson, and from the lakes and ponds referred to, it was found that there is a much greater number of bacteria in the snow ice than in clear ice, or that moderately full of bubbles. The species of bacteria are much more varied and abundant in the river ice than in that from the other sources, while in

both there is a considerable proportion of the relatively harmless water bacteria. While the number of living bacteria varies greatly, not only in different parts of the same block of ice, but also in ice from different parts of the river and from different lakes and ponds, the average number is considerably greater in ice from the river than from the lakes and ponds; even when Albany ice, which is the worst of all, was excluded from the estimate. It was found, also, that the average number of bacteria in ice from all sources taken together was far beyond the general standards which even a moderate degree of purity would allow. As regards the lakes and ponds we may conclude that, although the ice from some of them contains a larger number of living bacteria than is consistent with the highest hygienic standards, the conditions can be readily changed so as to render this ice unimpeachable. With Hudson River ice, however. the case is very different; and it is a pertinent question as to what actual danger is to be feared from its use for drinking purposes. A considerable number of the bacteria which it contains are undoubtedly the relatively or absolutely harmless species, which may exist in any natural river or spring water; but a large number may, with equal certainty, be assumed to originate from animal excreta. Here, again, it is scarcely to be doubted that a considerable proportion of the bacteria existing in sewage and coming from human and other excreta, and the various putrefying fluids which form a prominent ingredient in the water of populous towns, may not be positively dangerous if taken into the body in moderate quantities.

There are some varieties of diarrhœal disturbance, severe or mild, which often seem to depend upon impure water or ice; but whether they are occasioned by sewage or other bacteria, or by organic matter, or by both, is not yet certain; and this class of cases may be left out of view. Cholera and anthrax, both bacterial diseases, transmissible by drinking-water, are not ordinarily present in the sewage of the region under consideration; and these diseases, though they cannot be ignored by those having the public health in charge, may also be left out of view. But there are many common and very important bacterial affections, almost constantly present in large towns, like Albany, and frequent enough in the smaller ones, viz.: typhoid fever and the trouble associated with acute suppuration and the so-called blood-poisoning from wounds, and pyæmia. As to the probable danger from typhoid fever to which persons using Hudson River ice are exposed, it is impossible to determine at present. The typhoid bacillus was not detected in Hudson River ice; but to do this, even though it were present in considerable numbers, in its mixture with other species and in the large dilution which exists, is a matter attended with very great practical difficulties. As is well known, it has been found in water suspected to be the cause of certain local outbreaks of typhoid; but here the conditions for its discovery in such instances are much more favorable. It is certain that this ice is not so important a factor in the transmission of the disease as to render the typhoid fever statistics worse than those of other places whose residents use cleaner ice; but, at the same time, there are many cases of typhoid fever in which the most rigid examination of the sanitary surroundings of the patients and their personal contacts entirely fails to account for the origin of the disease; and some of them may well be cases of ice-poisoning from the typhoid bacillus. With the bacteria of suppuration and pyæmia the case seems much less serious, because of the very general antiseptic treatment of wounds now in vogue; but the fact that the *staphylococcus pyogones* may be in ice in a living condition is one that should not be lost sight of.

The measures which may be adopted to guard against this not only possible, but very probable, source of danger are of two kinds: *first*, such as come under the supervision of health officers; and *second*, those belonging to the province of the consumer. In the first place, it would seem necessary that the State Board of Health. or some other authorized body, should be placed in charge of the ice-harvesting fields, and, by a system of inspection not less strict than that which should exist in the case of the ordinary water supply, determine which, if any, of the sources of ice supply are so situated as to imperil the health of ice consumers. In view of Dr. Prudden's investigations, this appears to be comparatively simple in all cases except that of the Hudson or other large rivers. Here it would be necessary to establish, by a most thorough scientific examination, the distances from all sources of sewage pollution at which it might be safely assumed that the water had sufficiently freed itself from the bacterial and other impurities to form safe ice. It might in this way be possible to remove any chance of danger by permitting the questionable or bad ice to be sold only for cooking purposes, if such a classification were practicable, and thus not materially interfere with the interests of the ice companies. A compulsory system of disinfection of excreta in infectious diseases should be instituted, as has been done in other countries in which the purity of the water supply is under constant supervision.

THE PATHOLOGY OF PUERPERAL CONVULSIONS.

In regard to our editorial article on the "Treatment of Puerperal Convulsions," in THE JOURNAL of March 12, DR. F. WALTON TODD, of Stockton, Cal., writes:

"I do dot think that a misleading expression (*me judice*) in your editorial of the March 12th number, on the "Treatment of Puerperal Convulsions" should go unchallenged. You say: 'We need not stop here to discuss the pathology of puerperal convulsions.' In that lies the success or failure of our treatment of this frightful disease. That some cases are apoplectic while others are epileptic is clearly manifest from treatment, and abundantly attested by leading obstetricians of our own and foreign countries; and he who relies upon the hypodermic injection of morphine, on chloroform, chloral, veratrum viride, or the bromides in the apoplectic form will be doomed to disappointment; and he who relies upon the lancet in the epileptic will equally fail of a happy result.

"I will give two typical cases: Mrs. Dr. P. was delivered of a child, her first, at midnight. A few minutes afterwards she became convulsed, the paroxysms returning every half hour, and continuing all night and all the next day until 8 P.M. During this time eight of the leading physicians of our city had seen her, and upon the suggestions of one and another she had taken morphia by the mouth and hypodermically, chloroform, chloral and bromides, but the convulsions were unchecked, either in frequency or violence. I saw her at 8 P.M.; she was unconscious, lips and fingernails livid, breathing stertorous, extremities cold, but the pulse full and hard. My proposition to bleed was objected to as she had already lost much blood, but the objections being overruled I opened a vein freely, and before the operation was half finished the stertor was gone, she became calm, and had no further convulsions. 2. Mrs. McL. within two weeks of her confinement at full term gave evidence of albuminuria. She had taken pulv. jalap com., digitalis, and such other remedies as seemed called for. She was safely delivered, and went into convulsions in fifteen minutes. Anticipating them she had chloroform during the latter part of labor, and as soon as they appeared I gave her a hypodermic injection of morphia and atropia, and repeated it several times, together with chloroform and the bromides, with the same results as in the former case. The first case was apoplectic, and in the opinion of every one of the medical men present would have died without the bleeding; the second was epileptiform, and would, I think, have been injured by venesection."

We must take issue with our correspondent on several points. We are aware that Dewees taught that puerperal convulsions were epileptic, apoplectic, or hysterical, and Meigs and Hodge respectively referred the convulsions to the determination of blood to the head, and to a congestion of the cerebral vessels or an actual effusion of blood or serum into the substance or cavities of the brain; but to show how these theories are regarded by "leading obstetricians of our own and foreign countries" it is sufficient to say that they are not mentioned by Barnes, Galabin, Zweifel (whose work has just appeared), or Lusk; Parvin mentions them as a part of the history of the pathology of puerperal convulsions. Indeed, when the editorial article in question was written those theories did not once occur to us. Again, admitting such pathology of the affection, a discussion of it would be futile if it "is clearly manifest from treatment." If it is not manifest before treatment is begun it is certainly of no particular value as regards treatment. A differential diagnosis based on treatment in such a case is very much like that once given between acute yellow atrophy of the liver and yellow fever: if the patient gets well it is yellow fever; if he dies it is probably acute yellow atrophy of the liver. Still again, admitting some cases as apoplectic, there is a great deal of mystery surrounding the sudden recovery after venesection. Apoplexy does occur sometimes during labor, but the symptoms are not those of puerperal convulsions, nor is the recovery similar to that seen after venesection for such convulsions. In the fourth place, our correspondent thinks that his second case would have been injured by bleeding; as nothing is said as to the state of the pulse, or of the vascular symptoms, we are justified in saying that this case may have recovered under venesection as promptly as did the first case.

What we really meant by the sentence objected to was, that a discussion of the *pathology* of puerperal convulsions would have taken us beyond the limits (as to space) of our article. To us Breus' success with hot baths in this affection is, of itself, sufficient proof that these cases are neither apoplectic nor epileptic.

WHAT IS A BANQUET?

"A banquet without wine would be a hollow mockery." Such is the apparently serious exclamation in a recent editorial in one of our valuable exchanges.

The author of it was very properly deprecating the evil influence of the example of providing wine or alcoholic drink for banquets at annual meetings of State or other Medical Societies, and yet claiming that some kind of entertainment or social reunion is desirable on such occasions.

The same mental embarrassment that troubles our editorial confrère, has troubled in times past, and is still troubling the minds of many thousands of good people, who dread the terrible dangers of the luring wine-cup in the family, in the social circle, and on the banqueting table; and yet they seem puzzled to know how to be social or hospitable without it; or more correctly speaking, they are greatly oppressed with the fear that if the *wine* is omitted, some, at least, of those they desire to entertain will regard their "banquet a hollow mockery." But is there really any truth in the assertion that, "A banquet without *wine* would be a hollow mockery?" Is it true that banqueting simply means wine drinking, or that a banquet and a debauch are necessarily synonymous? The most authoritative lexicographer, using the English language, gives no less than six definitions or uses of the word banquet. Three of them make it indicate a bench, a three-legged stool, or a bridge or sidewalk, and the other three define it to be "a feast, a rich entertainment," etc., and illustrate it by quoting lines from Dryden, Coleridge, Milton, and the following from Evelyn: "There were all the dainties, not only of the season, but of what art could add, venison, plain solid meat, fowl, baked and boiled meat, *banquet* in exceeding plenty, and exquisitely dressed." But in none of them is there a single mention of wine or any other alcoholic drink. Poor indeed would be the civilized community that could not furnish from the dainties of the season, the varieties of fish, fowl, and solid meats, etc., exquisitely dressed and decorated by art sufficient for a "banquet of exceeding plenty," without wine. And still poorer must be the human mind that cannot rise to the higher plane of social and intellectual enjoyment without the prompting of the wine-cup.

We are not now alluding either to temperance or intemperance, but to the absurdity of claiming that a *banquet* cannot be abundantly rich, varied, and luxurious, and accompanied by the most brilliant display of wit, social repartee and eloquence, without either wine or other alcoholic beverage. Some of the richest and most enjoyable banquets we have ever attended, had neither a wine-glass nor a bottle in the room. The Temperance Breakfast, spread in the banqueting room of the Royal Pavilion during the last meeting of the British Medical Association in Brighton, was one of the most enjoyable feasts of the week. At the regular Annual Banquet of the Association during the same week, every member taking his ticket for the banquet exercised full liberty to choose *wine* or *no wine* and paid the price accordingly. The richest and most enjoyable banquet ever partaken of by the members of the Illinois State Medical Society was during the last meeting in this city, only a few years since, in the spacious dining room of the Grand Pacific Hotel, without so much as a cup of either fermented or distilled drinks. The time has fully come when every man and woman who desires neither to drink wine themselves nor to furnish it to others, should exercise the right of choice with just as much freedom, as those who desire to drink, whether in the family, the social circle, around the banqueting table, or in any other relation of life.

THEISM—THE NEW NERVOUS DISEASE.

Attention has recently been drawn to a new nervous disorder said to be especially prevalent in England and America; it is called "Theism" or tea-drinker's disease. It is said to exist in three stages —the acute, subacute, and chronic. At first the symptoms are congestion of the cephalic vessels, cerebral excitement, and animation of the face. These physiological effects being constantly provoked, give rise, after a while, to reaction marked by mental and bodily depression. The tea-drinker becomes impressionable and nervous, pale, subject to cardiac troubles, and seeks relief from these symptoms in a further indulgence in the favorite beverage, which for a time restores to a sense of well-being. These symptoms characterize the first two stages. In chronic cases theism is characterized by a grave alteration of the functions of the heart, and of the vasomotors, and by a disturbance of nutrition. The patient becomes subject to hallucinations, "nightmares" and nervous trembling. With those who take plenty of exercise, an habitual consumption often may be indulged in with impunity, but with women and young people who follow sedentary occupations this is not the case. The best treatment for theism is said to be indulgence in free exercise, such as walking and open air life.

ILLINOIS BOARD OF MEDICAL EXAMINERS.—The annual meeting for examination of candidates for licenses to practice medicine, will be held by the Illinois State Board of Health, at the Grand Pacific Hotel, Chicago, on Thursday, April 21.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, February 16, 1887.

THE PRESIDENT, JOS. TABER JOHNSON, M.D., IN THE CHAIR.

THE PRESIDENT presented

AN OVARIAN TUMOR

with the following history of the case:

Miss B., single, age 29, white, was sent to me by Dr. H. E. Leach, of South Washington, last December, on account of an enlargement in her abdomen recognized by Dr. Leach as an ovarian tumor. Upon examination I at once agreed with his diagnosis, and, although the tumor was no longer than an adult head, and gave her scarcely any trouble, I recommended its removal as soon as she could arrange for it.

I performed the operation on February 5, in a private room in the Providence Hospital, in the presence of Dr. Cutts, Bayne, Cuthbert, McArdle, Smith, Cook, and others. The tumor grew from the right ovary, was unattached except to a narrow pedicle and was removed after the evacuation of its contents through a two and one half inch incision. The tumor was multilocular. The contents of its numerous compartments differs in color, consistency and quantity. One small lobe was delivered through the abdominal opening—unbroken—and is preserved for inspection. The entire tumor weighed about six pounds. The left ovary was found to be at least four times its normal size, and cystic. In drawing it up for inspection one cyst ruptured. On this account and by its abnormal condition it, with its Fallopian tube, was unmoved also. The patient is now in her thirteenth day since the operation, perfectly comfortable, with normal pulse and temperature, and so far as I can see an unclouded prospect for perfect recovery.

A section of the unbroken cyst reveals it full of blonde hair in a sebaceous material, and the hard lump felt through the walls proves to be two rudimentary teeth.

Stated Meeting, February 23, 1887.

THE PRESIDENT IN THE CHAIR.

DR. J. FORD THOMPSON presented a specimen of

OSTEO-SARCOMA OF THE FEMUR.

The following is the history of the case: Mrs. X., aged 60, white, fell August, 1886, and fractured the right thigh about the middle. She was treated in the usual way by Dr. Sothoron. About seven weeks ago Dr. Thompson first saw her. He found non-union of the femur and stated that the only way to cure her was by an operation. After seeing her once or twice subsequently, however, he concluded that there was probably malignant disease of the bone. The woman was beginning to have pain and she was obliged to give up the use of crutches with which she had been going about. The thigh increased in size. Amputation seemed the only recourse, but upon consultation with Dr. Lincoln it was decided to delay a little longer, and the leg was put up with a slight amount of extension in order to keep it quiet. The pain, however, increased to such an extent that it was impossible to afford relief, and upon further consultation with Dr. Lincoln amputation was decided upon. Dr. Thompson stated that he fully appreciated the gravity of the operation, and while he felt himself justified in performing it, he was not by any means sure that the patient would not die on the table. This morning, (February 23,) with the assistance of Drs. Sothoron, S. W. Bogan, G. W. Johnson, Sprigg and Cutts, the operation was performed, the full consent of the patient and her friends having been obtained.

Dr. Thompson said that while he was certain that the best hope of permanent relief was in removing the leg at the hip, he had determined to make the flaps so that he might save as much of the femur as he possibly could, if he found that advisable. Having applied the Esmarch's elastic bandage from the toes to about where he expected the ends of the flaps would be, he put on an elastic ligature at this point. A second elastic ligature was applied just behind the tuberosity of the ischium, brought upwards and passed inside the crest of the ilium. He had seen this method of compression suggested, and some years ago he had used it with success in the case of a boy under similar circumstances. In this case, however, owing to the amount of fat, the large vessels in the anterior flap were not controlled, so that digital pressure had to be kept up upon the femoral artery until it could be tied. The posterior flap was kept perfectly dry. An anterior and a posterior flap were made, both by cutting from outside inwards. The femur having been reached it was sawn through just below the lesser trochanter. At the first cut of the saw it broke into fragments. Finding that the bone was diseased, the head of the femur was dissected out from the acetabulum. Owing to the great thickness of the flaps, free drainage became necessary, and with this end in view he inserted a large drainage tube into the acetabulum and a smaller one externally at the most dependent portion of the wound. The flaps were then united by four concealed catgut sutures into the mass of the muscles, several interrupted silk sutures in the usual way, and finally an uninterrupted catgut suture the whole length of the wound, thus closely and securely fixing the parts in apposition. The wound was then washed out with a warm, weak solution of carbolic acid, and the drainage tubes were found to communicate. Irrigation with hot water was kept up during the operation. The patient stood the operation very well, and when she was put to bed showed but little evidence of shock.

The dressing was of iodoform gauze followed by many thicknesses of bichloride of mercury gauze, kept in place by a spica of the groin. The thigh of the amputated leg is about twice as large as the

other. Below the knee the legs are of the same size. About the middle third of the thigh, can be plainly felt a tumor as large as an infant's head. The incision which is seen through this tumor shows it to be an encapsulated mass in appearance, and of a consistency but little harder than the brain. Several nodules, also encapsulated, project from it. The tumor appears to be nearly spherical in shape and about five and one-half inches in diameter. It has pushed forward from the femur to just under the skin, causing the muscles in contact with it almost entirely to disappear, while the other muscles have undergone fatty degeneration. At its centre the whole of the femur, except a few rough particles, has been absorbed for about four inches, while the rest of it, both above and below is practically a "sequestrum" in soft tissues, for it is completely dead. There has been an enormous increase of subcutaneous adipose tissue. The capsule strips readily from the tumor and shows no sign of ossification as might be expected if it were the periosteum.[1]

The specimen consists of the lower three-fourths of the left femur, the lower half of which, excepting the epiphysal portion has been destroyed by a spherical, lobulated, encapsuled, medullary tumor, five inches in diameter; the portion of bone remaining above the tumor as well as its medulla, is very vascular; and the muscles adjacent to the tumor, pale from fatty degeneration. The tumor probable originated in the medulla and in growing, produced the fracture mentioned in the history of the case.

The committee on Microscopy report as follows: This tumor is a spindle celled sarcoma with some giant cells. The softness of the growth is due to granular and fatty degeneration and the scarcity of connective tissue.

Dr. Swan M. Burnett read a paper entitled

REMARKS ON CATARACT EXTRACTION.

(See page 401.)

Dr. J. Ford Thompson said that he was a firm believer in antiseptic surgery, and he did not think that any good would accrue to that system if it had to rest upon the results obtained in ophthalmic or abdominal surgery. Dr. Burnett deserved credit for his effort to carry out antisepsis in his work on the eye, but it is probable that he can only approximately reach a perfect antiseptic dressing in that region. Distilled water might just as well be used as a weak solution of some antiseptic used merely to wash over the surface of a part. The same obtains in regard to abdominal surgery. Men who do not employ antiseptics in this field use their successes against Listerism. The peritoneum will not permit a very useful solution to be used upon it, and at any rate, that is only one branch of the wide domain of antiseptics. Lister himself says that the results obtained in abdominal surgery are not a criterion by which to judge of the value of antiseptics.

Dr. Burnett said that he was interested in the discussion of the value of antiseptics both as a pathologist and a physician, for it opens up the question of the etiology of suppuration. Is there a microbe of suppuration? If so and we can find something with which to throttle it, then we have accomplished a great end. He cannot agree with Dr. Thompson that the eye is not a good field for the use of antiseptics. We have here more or less control of the parts. We can make it a closed cavity by shutting the lids, and this is most favorable to healing without suppuration. It is also, constantly bathed by a bland if not strictly an antiseptic fluid. We cannot, however, foretell the cases in which suppuration will take place. Even the most perfect operations will be followed by this complication. He uses the biniodide of mercury 1 25,000 for which he has the highest authority. It seems that we have not reached the final cause of suppuration. Either there is some other external factor beside the microbe or we have not yet got the agent which will kill the germ.

There must be some condition of health or idiosyncrasy of the patient which makes them susceptible to this process. In all his cases in which suppuration occurred, the patients were in a low state of health. In one case a most perfect operation was done and there was every prospect of a typical union. Suppuration followed without any apparent reason. Six months previously the same patient who was in better health was operated upon with complete success.

Dr. Thompson thought that Dr. Burnett expects too much from the use of antiseptics. The surgeons who use antiseptics have about abandoned the idea that antiseptic dressings will prevent suppuration. Union without suppuration is obtained even where no antiseptics have been used.

The microbe of suppuration is not the important element, but the microbe of putrefaction. This last we do not yet know enough about. A deep seated abscess is not accompanied by a microbe of suppuration. It is a death of cells, and nature takes this way to rid herself of effete material. The pus is either absorbed or finds an exit for itself. When the pus reaches the surface of the body the trouble begins, for then it is that the air is admitted and with it the germ of putrefaction. The object of the antiseptic dressing is to shut out this germ, to keep the wound aseptic. In the cases referred to by Dr. Burnett, the patients were in bad health, which, as he says, probably had much to do with the complication. Moreover, in the eye, suppuration is a much more serious process than in other parts, and is of itself sufficient to destroy the organ without the complication of putrescence. Suppuration in the abdominal cavity is also as harmful as it is in the eye, so from the results in these two classes of cases the value of antiseptics in general surgery cannot be obtained. Of course, it is desirable to prevent suppuration if we can, but he does not believe that this end will ever be attained.

Dr. C. E. Hagner thought that Dr. Burnett struck the keynote when he spoke of the condition or idiosyncrasy of the patient as an etiological factor of the process of suppuration. Persons with a scrofulous diathesis, and so far as his observation goes, light haired and fair skinned persons are especially liable to suppuration. Laudable pus, however, is

[1] Patient died of exhaustion on the sixteenth day after operation.

not especially harmful. This we see in cases of obstetrics. For a few days after labor there is a bloody discharge *per vaginam*. This changes into a yellowish discharge, which is in fact, pus, but harmless pus until germs of putrefaction reach it.

In reply to Dr. J. T. Sothoron as to the percentage of failures in the cases reported, Dr. Burnett replied, but two cases in the thirty-four.

The President asked if the mania developed in one of the cases might not have been due to the anæsthetic used? Mania with this for a cause has been reported in abdominal surgery.

Dr. Burnett replied that the anæsthetic used in this case was cocaine.

(*To be concluded.*).

ST. LOUIS MEDICAL SOCIETY.

Stated Meeting, March 5, 1887.

The President, S. Pollak, M.D., in the Chair.

Dr. E. H. Gregory presented

A FIBROID TUMOR,

removed a week before, including the uterus. He first saw the woman from whom it was taken about one year ago. She had then been a sufferer for three years. It was a tumor that reached nearly to the umbilicus, and he was satisfied that it involved the uterus. She lost a good deal of blood and was treated with ergot. For two months before its removal she had not lost much blood, but there was almost a constant reddish leucorrhœa, and she was very pale. She suffered very little, nor was any function especially encroached upon. She was advised to let it alone, and the advice was repeated when she came again to have it operated upon. He told her that she was within a few years of a period when certain natural changes take place in the organ in the direction of atrophy. She was 35 years of age, and, feeling that there was much danger and uncertainty, he advised her to let it alone. But he felt sure that some younger, more enterprising surgeon might advise her to have it removed, and she seemed determined to have it done. It was therefore removed last Saturday. On opening the abdomen, carrying the incision beyond the umbilicus, he easily tilted this tumor out, put a clamp opposite the internal os, was very careful to exclude the intestines and more particularly the bladder, because in these cases it sometimes reaches high up, and it was excluded with some difficulty. Tait's clamp was used. After making the clamp fast on the bladder side, he was equally careful in making it fast on the hinder portion, and the uterus was then cut off and shelled out. The woman died. The rule is that they get well, and without a bad symptom. His patient died without a good symptom. He thought it well to have this sort of a thing placed opposite the numerous recoveries. She lived until Thursday. On Tuesday it was thought she was about to get well, but there was never a reaction from the operation, and he thought that she died from shock after hysterectomy. She had a temperature of 100° on Monday, but there was no peritonitis and no hæmorrhage, and he could not say positively what she died of.

Dr. Chas. Stevens wished to know whether, as a general thing, one would expect recovery after a uterus like this was removed.

Dr. Gregory said that in the large majority of cases, one would expect recovery. He removed one a year ago, and the woman recovered—"without a bad symptom." He did not use any drainage, because there was nothing to drain.

Dr. F. Lutz said that those who had paid attention to this subject think there is a well-founded opinion concerning the natural growth of a fibroma of the uterus; and in many instances, the question is, whether the patient ought to be operated on at a certain period of life; whether the nourishment of the fibroma does not cease at the time of the climacteric period. Keith lays special stress on the fact that in many cases a tumor which heretofore has been troublesome, when the climacteric is reached ceases both to be troublesome and to grow, on account of the diminished nutrition, on account of the change going on in the genital organs. Dr. Lutz has now under observation a woman whom he has been treating for more than a year, with a fibroma of the uterus. At first the hæmorrhages which occurred seemed to be due to the fact that she was in the climacteric period, occurring every two or three weeks. He thought she had an intra mural fibroid, and the question of interference came up. He succeeded in converting the gentleman who attended with him to the opinion that possibly this fibroid would be less troublesome after the period had passed, and that the symptoms were not sufficiently urgent to demand immediate operative interference, so he put off the operation, and he believes, rightly, as for the last four months there has been but little hæmorrhage, and the tumor has given her but little trouble. The patient is 43 years of age.

Stated Meeting, March 12, 1887.

The President, S. Pollak, M.D., in the Chair.

Dr. H. H. Mudd made some remarks on

COLLES' FRACTURE.

Last fall he presented a patient who had a Colles' fracture; accompanying the fracture there was an extensive teno-synovitis with stiffening of the parts around the joint. His reasons for again bringing up this subject may be found in a portion of the report of the discussion of the meeting held June 12, 1886, as follows: Dr. Gregory had not abandoned the old pistol-shaped splint and had heard no good argument to prove that such a splint invited subsequent deformity. He thought deformity almost absolutely certain in every fracture,—sometimes, of course, so slight as not to be apparent. Bones did not unite without scarring at the side of fracture, and there is no such thing as scar tissue without departure from the original. He had never seen a Colles' fracture treated with a perfect result. The almost universal rule is deformity. The displacement of the ulna

incident to the injury is perhaps the most frequent cause of deformity. The wrist is extremely seldom left so that the skillful eye and hand cannot detect that some accident has happened to it. As to the straight splint, cut off at the metacarpal joints, Percival Pott had once said justly, that a splint that does not control neighboring articulations was a mischievous splint. Dr. Lutz, at the same time, intimated that such perfect results were not to be expected. At the meeting of October 16, Dr. Lutz presented a specimen of fracture of lower end of radius, and in speaking of the results of Colles' fracture he thought it was very seldom that results could be obtained with no deformity. When Dr. Mudd presented this subject and patient last fall, he thought we ought to get good results in this fracture; better than the text books declared we could obtain; that for a number of years he had obtained better results, a percentage of good results that approached 90. He knew very well that tissue which is regenerated, which is renewed, is never quite so perfect as original tissue, and yet he is satisfied that many of the fractures we see should be treated so that the result would be good and that deformity could not be observed. He had an opportunity of presenting the results of some cases this evening, and asked the President to appoint a committee, of which Dr. Gregory and Dr. Lutz should be members, to inspect some of the cases and determine which arms were broken. He wished to call attention also to a recent fracture that is now under treatment, not so much because it illustrates the particular method that he has employed, as it indicates the condition of the arm after it has been confined for weeks. This fracture he did not see until forty-eight hours after the injury, and the deformity was marked, and it had been dressed imperfectly. He wished simply to show the freedom of motion given to the fingers without disturbance to the end of the bones by the short palmar splint. At the time mentioned, there was some discussion on that point. He believed it was of importance that the fingers should be free at the end of the third or fourth week, and especially in older patients.

Drs. F. Lutz, W. H. Ford, and LeGrand Atwood were appointed a committee to examine Dr. Mudd's cases, and report as follows: Concerning No. 1, Drs. Lutz and Ford say the left is fractured; Dr. Atwood says the right is fractured. The left one is correct. No. 2, all these doctors say it is the right one; correct. No. 3, Dr. Atwood says it is the left, Drs. Lutz and Ford say the right; the right was broken.

Dr. F. J. Lutz said that the cases were wonderfully perfect results. An examination of this kind must be very imperfect. The first thing any one does is to make a comparison between the two wrists, the distance between the extreme lower ends of the ulna and radius. Next, one would expect to find thickening, if not displacements of the lower end of the radius. Ordinarily there is some difference between the transverse diameter of the wrists, dependent on whether the man is right or left handed. Perhaps it would be equal if he were ambidextrous. In most cases of Colles' fracture there is displacement. In one of the cases, No. 3, there is thickening at the ulnar side of the radius, if not displacement of the lower fragment. In No. 2, in which he guessed right, the lower portion of the radius is thickened. In No. 1, the difference between the radius and ulna of the left arm he thought was markedly greater than that of the right one. They were better results than we have a right to expect, but he added that the fourth case will be the usual result of a Colles' fracture. The exhibition of the cases proved this, that in three cases a better result than is ordinarly gotten was obtained. In the fourth, the usual result was obtained.

Dr. A. Green said he had treated three or four cases a month from the Turner gymnasium with the pistol-shaped splint, and that so far as the appearance and use of the arms of fourteen cases he had were concerned, the results were perfect. The fifteenth case was that of a boy who was always running about; a few days after injury, on opening dressing and trying to get passive motion, he found that the fracture was united but not hardened, but the radius was leaning too much towards the ulna. He was afraid that supination would be lost, but introduced between the bones a pad, and a perfect result is the consequence.

Dr. Gregory agreed with Dr. Lutz exactly, and supposed that everybody who knew him would say that he has held that position for many years; for he has been telling people for many years to "let it alone." In reply to Dr. Dudley, if he ever knew a tumor of that size to be recovered from after operation? Dr. Gregory said he had seen cases recover of a tumor that size. He determined that if he could not remove the tumor, he could remove the ovaries. If he had another case, and could look into the woman and see just what was seen after it was exposed, he should advise an operation, because he is satisfied that that tumor would have grown worse.

Dr. Le Grand Atwood was surprised and delighted with the result of these three cases. He always used the pistol-shaped splint, and to his sorrow. He was careful to remove it to make passive motion, but invariably with bad results. An outline of his future plan of treatment is, that he will not use the pistol-shaped splint, and will make the patient use the fingers from day to day to prevent the anchylosis which is made with the pistol-shaped splint.

Dr. Lutz did not consider Dr. Mudd's cases deformed in the sense that he considered the ordinary result obtained from a Colles' fracture deformities.

Dr. Mudd said that no one will contend that we can have repair to a broken bone without some thickening after the injury. He believed there was no deformity in the three cases, nor that there will be deformity in the other case, notwithstanding the difficulties. He had asked, to-day, Dr. Moore to go and see an old gentleman 67 years of age, whom he treated, who suffered from Colles' fracture in January, 1873, and so perfect was the result that the man, as also his wife, was unable to tell which arm was broken. He did not advocate any special method of treatment. There are methods, the plaster, the dorsal or palmar splint, etc., with which we will get

good results. The dorsal is not as comfortable as the palmar splint. The plaster will make a very perfect dressing if the swelling is not great. He feels safer when he has a splint which he can remove to see if there is any irritation or swelling of the tissues. Patients differ in their complaints of pain. If we watch the amount of irritation expressed by the tissues, by the infiltration, we can very readily change the points of pressure, and remove very often the conditions which develop irritation. He thinks that if there is any splint which is a source of irritation to the patient, it is the pistol-shaped splint, and the Dupuytren splint in Pott's fracture. They are dangerous splints. If there is much swelling and infiltration around the tendons and ligaments, when the ankle is turned inward in Pott's fracture, we put it in an uncomfortable and dangerous position by using the Dupuytren splint, because it increases the amount of engorgement and deposit about the bones. Prof. Dennis, of New York, had developed a point in fractures about ankle joints that had been impressed upon his mind for ten years—first by a patient, Dr. Gregory—the fact that the irritation about such a fracture is diminished very much if the muscles are put at rest. He put them at rest by making an excision. He had seen Pott's fracture, where there was simply turning out of the bone, treated by putting it back with the muscles on a stretch, and the result was a long-continued inflammation. Dennis says divide the tendons when the muscles are excited to action by the irritation about the joint. A Colles' fracture is not put at rest on a pistol shaped splint, but the ligaments are put upon the stretch. The fingers should rest on the splint until the third or fourth week. Then they can be released without disturbance, and in that way mobility can be maintained. In addition to the straight palmar splint padded at the hand, he puts a pad above the end of the radius; it does not press on the sharp end of the radius, but is above. He never uses a second or dorsal splint, one being sufficient.

Dr. D. V. Dean used the straight palmar splint, or the plaster or other molded splint, usually not the plaster until after a few days, when the swelling has subsided. If one holds his hand voluntarily, or by dressings, in the position of the pistol splint, it will soon be tiresome and painful. He has never had a case under his care conducted through to the end with a pistol splint, because he has been better satisfied with other methods. In using the plaster or molded splint, he always slits it after the third or fourth day, so as to see the position. He rarely allows the palmar splint to extend further than the base of the first row of the phalanges, at least after the first week or so.

Dr. A. H. Meissenbach said the case he had treated by Dr. Mudd's method had given the best results. He had a case which occurred this week; the patient came to the office when he was busy, and having a pistol-shaped splint at hand he put it on, temporarily; the man complained of pain that night. He changed the splint the next day, and after that the arm felt perfectly comfortable. It was natural, because the idea of the pistol splint is to extend and bring into line over riding fragments, and in order to do this there must be a great amount of pressure. He has adopted a little different plan. A greater amount of freedom can be allowed without detriment to the part, not abridging the motion even at first. He thinks it can be done, because a certain amount of motion is not detrimental to the healing of fractures, for instance in position, and also in fractures of the humerus, and in some of the thigh. He thought Dr. Mudd made a very good point in stating that special attention should be given to this point in cases over 40 years of age, because he knew of several cases that had at first temporary anchylosis, and at last permanent anchylosis of the part.

Dr. W. H. Ford said Dr. Mudd's results in cases are in the highest degree satisfactory; so much so that he would not be inclined to consider either of the wrists as deformed at present. They are almost normal, and in the course of time will become more so. They are decidedly better than those it has been his lot to see in the limited results he has had. He has used the straight palmar and dorsal in all his cases. He found the other method to produce so much discomfort that he removed it and substituted the other splint. He obtained good results, but as all the cases were hard working people, they were not absolutely perfect. But it stands to reason that if we quiet the parts with a palmar and dorsal splint and leave the motion of the fingers with good supination, we will get pretty good results. He thinks the action of the supinator longus, and to some extent of the square pronator, is preventive of good results. The remark of Dr. Mudd concerning the muscular action in Pott's fracture, he thought correct. He had seen very great distortion after that treatment. In 1867 he advocated the plan of tenotomy for the the three perinei and possibly for the tibialis anticus; but he had never done it. He supposed the plan would be applicable only where there is a great deal of muscular action. It must be done early or not at all, before the œdema sets in. But of late years he has fallen on a different plan, which has been very satisfactory. If the fracture is not compound, he generally places the foot back in position. He takes a broad band of adhesive rubber plaster, 1¾ inch wide, and long enough to go from foot to knee. One point of it is applied to the dorsum of the foot, carried outwards, brought around against the sole, then up, drawing down the tissues, fastening it to the skin, turning in the remainder and securing it. He places it, besides, in a splint, and if necessary elevates it. The results have been so good that it is almost impossible to know that anything had ever happened to the foot, and there is no tendency for the foot to splay out. So that may possibly supplant the measure of tenotomy in cases where there is no spasm of the muscles, which is more apt to occur in compound fractures.

Dr. H. C. Fairbrother asked Dr. Mudd how early after the dressing he removes it, and at how late a period he removes it finally in the average age of patients.

Dr. Mudd said that if the fragments are well adjusted there is not much tendency to displacement.

He inspects such fractures on the fourth day after the injury; the worse the case the earlier he inspects. He removes these splints in the fourth or sixth week. The age does not govern very materially.

GYNÆCOLOGICAL SOCIETY OF BOSTON.

Stated Meeting, December 19, 1886.

The President, H. O. Marcy, M.D., in the Chair.

H. J. Harriman, M.D., Secretary.

Dr. E. C. Keller exhibited an

OVARIAN CYST,

removed by her at the New England Hospital for Women, with the following history: Patient 32 years old; widow. Tumor of two years' growth. Had been tapped some months since, and again about three weeks prior to the operation. Had always had much pain and had not been able to lie down since February, 1886; heart displaced and pulse 120; weight before operation 126 pounds. At the operation the tumor was found bound down by adhesions to the omentum, stomach and intestines. The adhesions were not recent. The opening into the cyst resulting from the last tapping had not closed, and the ovarian fluid had leaked into the peritoneal cavity. The tumor was multilocular, and one of the sacs contained a very dark fluid, almost black. Bleeding from small vessels torn while breaking down the adhesions was so troublesome that twenty ligatures were applied, and as they did not check the hæmorrhage, two gallons of water at a temperature of 118° F. were poured into the abdominal cavity. Even this was not entirely successful, and Monsell's solution, diluted one-half with water, was used to touch the bleeding surfaces. The pedicle was tied with the shoemaker's stitch as recommended by Dr. Marcy. A glass drainage tube was left in the wound, and on the day following the operation one half ounce of black fluid was washed out of the pelvic cavity. Stitches were removed on the eleventh day, and on the day when the case was reported the patient was doing well.

Dr. E. W. Cushing read a paper on

THE USE OF IRRIGATION IN GYNÆCOLOGY.

In 1845 Semmelweiss propounded the theory and proved the fact that, as a rule, puerperal fever is simply an infection of the genital tract at the hand of the physician or midwife. Since then the genius of Pasteur and the labors of Lister have made clear the nature of the infection, and the teachings of Semmelweiss have been generally accepted. Now it is proposed to broaden the application of this principle of infection and to show that pelvic inflammations of other than puerperal origin are due to septic infection. "Catching cold," with subsequent inflammation in the pelvis following gynecological operation or manipulation, means either that septic material has been introduced into the lymphatics from the surface laid bare by operation, thus producing a cellulitis, or that the endometrium has been infected, and that the infection has spread up the tubes and set up a peritonitis. The immediate cause of such inflammation is an infection with living bacteria or germs; the more or less favorable nature of the soil into which they fall determining whether the symptoms will be slight, with moderate fever and local hardness, or a violent explosion of peritonitis or septicæmia resulting in death.

In some cases collections of bacteria may lie dormant for long periods in the tubes or in circumscribed abscesses, ready to start into activity when released. Self-infection from such sources explains many mysterious cases of puerperal fever and cellulitis. It should be remembered that the vagina is a veritable hot-bed for the development of bacteria, and that an old gleet in the husband may have set up a mild gonorrhœa in the wife, so that gonococci or other germs abound, ready to be carried into the uterus on a sound, or to infect any wound which a surgeon may make.

The writer expressed the opinion that endometritis, erosion, ectropion, etc., may be due to bacterial irritation.

In view of the fact that these septic processes cannot be controlled by treatment after they have been thoroughly inaugurated, it is the duty of the physician, first, to prevent such troubles by killing off the bacteria in the vagina and uterus; and second, to avoid operations or harsh manipulations when he has reason to believe that the tubes contain pus.

For the first purpose there is nothing so sure, speedy and convenient as bichloride of mercury. In hospitals it ought to be a part of every vaginal examination or operation to douche the vagina well with 1:1000 or 1:2000 sublimate solution, and to carry some of an even stronger solution or strong carbolic acid into the uterus on a probe. When the cavity of the wound is to be invaded by operation it should be thoroughly washed out with a disinfecting solution. In cystitis, after operation, a sublimate solution of 1:5000 should be run through the bladder, washing it out thoroughly and repeatedly, and be followed by an iodoform emulsion.

Before, during and after all operations upon the cervix, and between packings of the vagina for hæmorrhage, the vagina should be irrigated. For long operations, or where much raw surface is exposed, the solution should be 1:5000 and should be hot. In hospitals it is comparatively easy to introduce the systematic use of irrigation, but in office practice the surgeon is tempted to neglect it. In office practice a good swabbing of the vagina with sublimate solution on cotton may answer the purpose, or one of the springes may be used which irrigate the vagina without spilling the fluid externally. A sublimate solution in water does not keep well, and must be prepared every day. By using the sublimate lozenges prepared by Grosvenor & Richards, each of which contains 7⅓ grains, a quart of solution can be quickly made by using one lozenge. For hospital use a solution of sublimate in glycerine is convenient. If 1 drachm of a solution containing ℥ij of sublimate to ℥i of glycerine be added to two quarts of water, a solution 1:2000 will be gained.

Dr. W. Symington Brown said that his principal objection to corrosive sublimate was its poisonous character, which renders it a dangerous agent in the hands of inexperienced or careless physicians. Cases of poisoning from the use of the sublimate douche have been reported, and a 1:4000 solution is the only safe one. Iodoform is also a source of danger, as it contains 90 per cent. of iodine. Antiseptic irrigation in all cases is a fallacy, and cleanliness from plain water is equally efficient. The three essentials of Listerism are absolute cleanliness, rest and drainage—germicides are not necessary.

Dr. H. L. Betts said that she used the antiseptic douche as much to protect herself from infection during examinations, etc., as to protect the patient.

Dr. E. C. Keller is partial to antiseptics, and uses sublimate, iodoform and carbolic acid freely in both surgery and obstetrics. The effect of the mercury upon instruments is bad, and to avoid this she uses a sublimate solution for irrigation and a carbolized solution in operations. Dr. Keller has always used iodoform freely and has never seen any bad effect. She does not use the douche after a normal labor unless the lochia are foul.

Dr. H. C. White regarded the use of antiseptic irrigation as essential in hospitals, but as unnecessary in private practice. In applying such measures a distinction should be made between physiological and pathological processes, and antiseptics which may be of value in morbid conditions are not essential when the process is normal, as in parturition.

Dr. Cushing, in closing the discussion, said that he had not intended to open the whole question of antiseptics in his paper, but only to present one method in which they can be profitably used. He regarded the use of antiseptic precautions as necessary for the general practitioner as for the hospital surgeon, on account of the variety of infections to which the former is exposed. He also thought that the dangers arising from absorption of the sublimate solution had been overestimated, and that no trouble would arise if ordinary precautions were used.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, March 23, 1887.

The Vice-President, W. W. Keen, M.D., in the Chair.

Dr. Morris J. Lewis read a paper on

THE SEASONAL RELATIONS OF CHOREA, RHEUMATISM, AND NEURALGIA.

(See page 404.)

Dr. W. Osler said: This is a very important and valuable (as well as seasonable) contribution to the interesting and obscure question of the relations of chorea and rheumatism. As Dr. Lewis remarked, it is not a little curious that, in his tables, rheumatism has followed chorea, while the common experience is that chorea follows rheumatism. It is the more usual sequence for a child who already has rheumatism to develop chorea, though they frequently come on so closely that it is sometimes difficult to say which came first.

I would ask Dr. Lewis whether or not his statistics in this matter gave any clew as to the relationship of these two diseases? In what way chorea is related to rheumatism, or in what way the rheumatism to the chorea? The recent statistics of the Committee of the Collective Investigation of Disease in Great Britain, show that some 32 per cent. of all the cases of chorea (430 in number) were associated with rheumatism. These affections have, in common, extreme liability of endocardial complications. It is not improbable that all cases of chorea have endocarditis. So far as the morbid anatomy goes, I do not know of an instance in which the mitral valve did not present vegetations. In the three instances that I have examined, this has not been the case. In the cases occurring at Guy's Hospital over a number of years the same has been true. So far as my reading goes, the experience of German observers confirms this view. It might be interesting to ask whether the blustering, stormy weather of the past two months has brought out an unusual number of cases of chorea. It has not brought them to my clinics.

Dr. W. B. Atkinson said: I have had within the last four weeks, at my clinic, three severe cases of chorea. During the month of January I did not see a single case. I cannot say that I have ever seen a case in which an attack of chorea antedated rheumatism, but I have seen many cases in which rheumatism has been followed by chorea.

Dr. Lewis said: I am unable to explain the relation between chorea and rheumatism. With reference to the statistics, I will state that those of chorea were obtained from the Orthopædic Hospital, the patients, as a rule, being children, while those of rheumatism were from the Pennsylvania Hospital, and the patients mainly adults.

Dr. Osler mentions that he has not seen an increased number of cases of chorea at recent clinics. I think that he will find that many cases that have occurred will arrive or be heard from later, It is not the month of application that I have taken, but the month of onset.

DOMESTIC CORRESPONDENCE

TRANSFUSION OF BLOOD.

Dear Sir:—Your synopsis of Dr. Hunter's paper, on transfusion, published in The Journal of March 5, is very interesting, and presents some new ideas on this almost obsolete operation. If I interpret them correctly the conclusions Dr. Hunter arrives at are in brief, as follows:

In a transfusion upon man of 6 ounces of blood, the excess of corpuscles would, under normal circumstances, be got rid of in a period of from one to two days.

2. That the condition of the blood as regards the number of corpuscles, does not in itself, in cases of anæmia constitute the disease, but is mainly a result.

3. Transfusion can only act by modifying the nutrition of the body, and this it can do only: 1. By the corpuscles continuing to live for a certain time within the circulation and performing their functions. 2. By the introduction of oxygen and the increased supply of oxygen brought to the tissues while the corpuscles remain in the blood; or, 3. By the introduction of the hæmoglobin contained in the blood.

As to the first possible benefit, Dr. Hunter concludes that the corpuscles transfused into an organism whose own corpuscles were being destroyed with undue rapidity, would themselves be rapidly destroyed and of not the slightest value. This reasoning also disposes of the second supposed benefit; and as to the third, "only a small proportion of the hæmoglobin so introduced can be utilized for purposes of blood formation, etc."

Now, allow me to say, that Dr. Hunter's theory is based entirely on suppositions and premises which are in dispute and doubtful of demonstration. The life of the blood corpuscle in sickness and in health; the cause of pernicious prognosive anæmia; the disposition which the organism makes of the hæmoglobin after the corpuscle is destroyed; the office of the liver in blood destruction, etc. All these functions are difficult and unsettled. But one thing is certain: "In many cases of anæmia the first important requirement is to make blood." (S. Weir Mitchell in his work "Fat and Blood.")

All cases of anæmia are not alike; some are beyond the reach of science. After transfusion, in some cases there is hæmaturia owing to the rapid destruction of the excess of blood corpuscles, in many cases there is no hæmaturia. In some cases there is no perceptible benefit, in many cases transfusion has resulted in a cure. Facts are better than theories, and displace and dispel them. Professor Immerman, in Vol. 18, of the "Cyclopædia of the Practice of Medicine," gives a table of 243 cases; 114 complete recoveries, thirty-four temporary benefit, ninety-five no benefit. Roussel reports that from 1820 to 1875 transfusion saved life in at least eighty cases of confinement, in thirty cases of wounds in war or of surgical wounds, in fifty cases of diseases of the blood or *anæmic* consumption, and twenty cases of typhus, chorea, etc. Professor Brunton, of Philadelphia, says: "It is not the number of *failures* but the number of *successes* in transfusion which surprise us, when we consider the desperate circumstances for which the operation has been reserved." (*Medical Record*, 1878. p. 20).

I am in receipt of a letter from Dr. Frank W. Epley, of New Richmond, Wis., in which he says: "I have transfused four times for anæmia, twice with brilliant success, and once it was a total failure, owing to some internal ulcer in the pelvic region, which I diagnosed malignant. The fourth operation was in a case of phthisis. The only benefit I could see was a cessation of the sweating which had previously baffled all our efforts. After the transfusion there was never a particle of sweating. . . I am convinced that anæmia may always be benefited, and many cases cured by transfusion." In one case Dr. Epley sent a specimen of the patient's blood before transfusion and three days afterwards to Professor Danforth for microscopical examination. In the first specimen Professor Danforth reported the corpuscles shriveled and serated; in the second case he reported a marked improvement. This tends to show that if the excess of corpuscles are disposed of it is not necessarily those transfused. Rokitansky's opinion was based on the fact, that the corpuscles of the defibrinated blood were not destroyed by the process, but would live when transplanted.

It is now known that in addition to the red blood corpuscle which, with the white, Rokitansky supposed to be all there were, there are, in the adult, about 500,000 blood placques per ccm. which are entirely destroyed by the process of extracting the fibrin, and of which Rokitansky knew nothing. These are, according to the weight of reasoning (if not the weight of authority) elementary corpuscles, and a very important and useful element of the blood.

I do not wish to be understood as claiming that transfusion is a specific in any class of cases. Doubtless there are a multitude of anæmic diseases in which patients have inherited a predisposition to consumption in some form, for whom there is no cure; but there are other cases which may be called accidental. They began with a cold, or are the result of ignorant disregard of the laws of health, or follow other diseases, such as typhus or diphtheria or surgical wounds, or pyæmia. In these cases I believe direct transfusion to be the best known curative agent. It is in the direct line of modern medication, tonics, fresh air, sunlight, cleanliness, etc., for it is a tonic, it is air, it is sunlight. "The blood is the natural and healthful stimulant of the heart." "Oxygen is the most important nutritive element." (Prof. Henry, "Lecture on Anæmia," August *Polyclinic.*)

I believe transfusion to-day occupies the insecure place which it has for two reasons: *First*, it is a difficult operation to perform.

"No safe and simple instrument has yet been devised with which the operation can be safely performed." (Immermann.)

Second; The medical profession have, for years insisted that defibrinated blood is fully as good as the unchanged blood (and some say better) for transfusion. So the operation has been almost wholly confined to that class, but my own experiments have been sufficient to satisfy me that blood exposed to the air and which has been subjected to the process of whipping, although not worthless, "will never," as Roussel says, "give those satisfactory results which follow a direct transfusion."

Respectfully yours, E. E. Allen, M.D.

Grand Rapids, Mich., March 15, 1887.

ASSOCIATION ITEMS.

AMERICAN MEDICAL ASSOCIATION.

The Thirty-eighth Annual Session will be held in Chicago, Ill., on Tuesday, Wednesday, Thursday and Friday, June 7, 8, 9 and 10, commencing on Tuesday, at 11 A.M.

"The delegates shall receive their appointment from permanently organized State Medical Societies, and such County and District Medical Societies *as are recognized by representation in their respective State Societies*, and from the Medical Department of the Army and Navy, and the Marine Hospital Service of the United States.

"Each State, County, and District Medical Society entitled to representation shall have the privilege of sending to the Association one delegate for every ten of its regular resident members, and one for every additional fraction of more than half that number: *Provided*, however, that the number of delegates for any particular State, territory, county, city or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the Code of Ethics of the Association."

Secretaries of Medical Societies, as above designated, are earnestly requested to forward, *at once*, lists of their delegates.

Also, that the Permanent Secretary may be enabled to erase from the roll the names of those who have forfeited their membership, the Secretaries *are, by special resolution*, requested to send to him, annually, a corrected list of the membership of their respective Societies.

SECTIONS.

"The Chairmen of the several Sections shall prepare and read, in the general sessions of the Association, papers on the advances and discoveries of the past year in the branches of science included in their respective Sections. . . ." *By-Laws*, Art. II, Sec. 4.

Practice of Medicine, Materia Medica and Physiology.—Dr. J. S. Lynch, Baltimore, Md., Chairman; Dr. J. B. Marvin, Louisville, Ky., Secretary.

Obstetrics and Diseases of Women and Children.—Dr. F. M. Johnson, Kansas City, Mo., Chairman; Dr. W. W. Jaggard, Chicago, Ill., Secretary.

Surgery and Anatomy.—Dr. H. H. Mudd, St. Louis, Mo., Chairman; Dr. A. M. Pollock, Pittsburg, Pa., Secretary.

State Medicine.—Dr. George H. Rohé, Baltimore, Md., Chairman; Dr. Walter Wyman, U. S. M. Hospital, New York, Secretary.

Ophthalmology, Otology and Laryngology.—Dr. X. C. Scott, Cleveland, O., Chairman; Dr. J. H. Thompson, Kansas City, Mo., Secretary.

Diseases of Children.—Dr. DeLaskie Miller, Chicago, Ill., Chairman; Dr. W. B. Lawrence, Batesville, Ark., Secretary.

Oral and Dental Surgery.—Dr. John S. Marshall, Chicago, Ill., Chairman; Dr. E. S. Talbot, Chicago, Ill., Secretary.

Medical Jurisprudence.—Dr. I. N. Quimby, Jersey City, N. J., Chairman; Dr. H. H. Kimball, Minneapolis, Minn., Secretary.

A member desiring to read a paper before a Section should forward the paper, or its *title* and *length* (not exceeding twenty minutes in reading), to the Chairman of the Committee of Arrangements at least one month before the meeting.—*By-Laws.*

Committee of Arrangements.—Dr. Charles Gilman Smith, Chicago, Ill., Chairman.

Amendment to By-Laws.—Create a new Section, to be known as the Section on Dermatology and Venereal Diseases. WM. B. ATKINSON, M.D.,
Permanent Secretary.
Philadelphia, 1400 Pine St., S. W. cor. Broad.

MISCELLANEOUS.

DR. JOHN W. RUSSELL.—At a called meeting of the Knox County Medical Society, held March 23, 1887, the following preamble and resolutions were adopted:

WHEREAS, It has pleased Almighty God to remove from among us Dr. John W. Russell, it seems fitting for us who have been favored with the acquaintance and instruction of one whose intellectual attainments have commanded the highest admiration, whose name will stand among the foremost of his profession and whose memory will be cherished by all who had the honor to be his students and associates, to in some manner express our deep sorrow. Therefore, be it

Resolved, That this society and the medical profession have sustained the loss of a most active, earnest, and useful member.

Resolved, That the community in which he lived has thus been deprived of a Christian gentleman, and society of one of its truest and noblest safeguards—an active and learned physician, skillful and beloved, who devoted the best efforts of a well-balanced mind to the alleviation of suffering humanity.

Resolved, That we extend to the bereaved family our sincere sympathy in their affliction.

Resolved, That the medical fraternity attend the funeral in a body.

Resolved, That a copy of these resolutions be presented to the family, to each of the county papers, and to the *Medical and Surgical Reporter*, *Medical Record*, and JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (Signed)

F. C. HARIMORE, M.D.,
P. PICKARD, M.D.,
R. W. COLVILLE, M.D.,
Committee.

FRENCH SURGICAL CONGRESS.—The next meeting of the French Surgical Congress, the third since the foundation, will be held in Paris, in April, 1888, under the Presidency of Professor Verneuil; the precise date will be subsequently announced. The following questions are proposed for debate at the Congress: 1. On the treatment of gunshot wounds of the visceral cavities. 2. On the value of the radical treatment of hernia as a permanent cure. 3. Chronic suppuration of the pleura, and its operative treatment. 4. Recurrence of tumors after operation (causes and prevention).

The object of the French Surgical Congress is to establish scientific relations amongst surgeons and practioners of France and foreign countries. All qualified men become members of the Congress on duly entering their names and on payment of the snbscription of 20 francs. Members of the Congress

who desire to make a communication to the meeting are requested to communicate their intention to the Secretary-General three months before the opening of the Congress. A summary of the conclusions of their paper must also be forwarded. All communications should be addressed to Dr. S. Pozzi, Secretaire-Général, Congrés de Chirurgie Française, 10 Place Vendome, Paris.

Birth and Death-rate in England and Wales.—The report of the Registrar General for 1885, just issued, shows that the births of the year were 32.5 to the 1,000 persons living; the lowest number recorded since 1848. With the exception of an insignificant rise in 1884, the rate has fallen continuously year by year since 1876. The male births were 455,809, the female 438,461. It is satisfactory to learn that the long-continued fall in the marriage rate has led, for 1885 at least, to no increase in the number of illegitimate births. On the contrary, the decline under this latter heading has beaten the record in the most encouraging way. The deaths of the year lag behind the births in a way that precludes all anxiety for the immediate future of the race. They were in proportion of 19.0 to the 1,000—with one solitary exception, the lowest yet recorded. Among the deaths were 63 of reputed centenarians, 19 of whom were males and 44 females. The death-rate in the urban population was 20.0 per 1,000, and the lowest on record, while that of the rural population was 17.5, a slight increase.

Dr. R. E. Carrington, one of the most promising physicians on the junior staff of Guy's Hospital, has just died of pleuro-pneumonia, after a two days' illness.

A Loyal Dentist.—A dentist in a small provincial town in England, will celebrate Her Majesty's Jubilee by extracting teeth and supplying false ones free of charge on the morning of the celebration.

Surgical Laboratories.—The surgeons of the London Hospitals have signed a memorial asking the Royal College of Surgeons of England to build a suitable laboratory for the study of morbid anatomy, including histology, experimental pathology, including bacteriology, and of experimental operative surgery. They say that in view of the power and wealth of the college any Fellow or Member who is competent to carry out scientific investigations should be able to do so without inconvenience or expense.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 26, 1887, TO APRIL 1, 1887

Capt. Harry O. Perley, Asst. Surgeon, ordered for temporary duty at Ft. Maginnis, M. T. S. O. 23, Dept. Dak., March 18, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING APRIL 2, 1887.

Waggener, J. R., P. A. Surgeon, commissioned a Surgeon on March 18.

Fitts, H. B., P. A. Surgeon, ordered to the receiving ship "Vermont."

Tracy, E. C., Asst. Surgeon, detached from the "Vermont" and ordered to the "Atlanta."

Heffinger, A. C., P. A. Surgeon, detached from the "Atlanta" and ordered on special duty in connection with construction of hospital at Widows Island, Me.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDED APRIL 2, 1887.

Urquhart, F. M., P. A. Surgeon, to assume charge of Cape Charles Quarantine. March 29, 1887.

Norman, Seaton, Asst. Surgeon, to report for duty at Cape Charles Quarantine. April 2, 1887.

NOTES AND QUERIES.

ARMY SURGEONS ON SICK LEAVE.

Dear Sir:—Referring to "Inquirer's" question in The Journal of March 19, it would seem that he has found a prototype of the famous "Pooh Bah," in a physician who is:—1st, an Assistant Surgeon U. S. Army; 2d, a local practitioner of medicine; 3d, a holder of a State appointment; 4th, a proprietor of a drug store, as the inquirer states, "all at the same time."

Now, it would seem that a solution is very easy. If an Assistant Surgeon is on sick leave, undoubtedly his only official duty is to get well; and presumably the Medical Department of the Army is the judge of this matter, though undoubtedly "Inquirer" might take the Surgeon-General into his confidence if he thinks the officer is not recovering quickly enough, or his recovery is hampered by the duties of offices 2, 3, and 4. If he is not attending to his duty under the second heading, it might be inferred he would have no patients, *ergo*, nothing to practice on. If he is not fulfilling the requisites of the third office, presumably the State Governor or legislature is open to complaint. And, fourthly, if the drug store is a poor one, it will be a victim to inanition. So, therefore, it seems that the question answers itself, and an Assistant Surgeon U. S. A. can do all of these things.

By section 94, Rev. Reg. U. S. A., 1881, "Whenever an officer has been absent on account of sickness for one year, he may be examined by a Medical Board, and the case specially reported to the President." As the retired list is limited to 400, he may have to wait an opportunity therefor.

Section 106 of the Regulations states: "Retired officers may engage in private business or hold civil offices not contrary to law."

Very respectfully,

S. T. Armstrong.

Memphis, Tenn., March 22, 1887.

PRIVATE REGISTRATION AT THE CONGRESS.

Dear Sir:—In view of the large number of gentlemen who will undoubtedly attend the International Congress, and who will hope and expect to meet old friends, classmates, etc., would it not be possible for the Committee of Arrangements to request each State Secretary to provide and forward a large register—plainly printed on the cover the name of the State—that every attendant might register his name, residence and stopping place. To the large majority it will be a pleasure trip; they will rely on published transactions for the work of the Congress. The finding of friends is to many one of the chief pleasures; yet we cannot hope to "meet by chance" all those we want to see most. A line of registers, for separate, States will in many ways facilitate the work, and accommodate individuals immensely. If it is thought advisable I will submit my plan in detail to the committee.

Hippolapius.

Terre Haute, Ind., March 20, 1887.

CORRIGENDA.

In the discussion on the Cæsarean operation, Journal of March 19, p. 325, 1st column, 17th line from bottom, for Heyner read *Keyser*.

In the issue of April 2, p. 388, 2d col., line 27, for about 25 per cent., read *one-half of 1 per cent.*

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ORIGINAL ARTICLES.

A CONTRIBUTION TO THE THERAPEUTICS OF WATER, AND THE PHYSIOLOGICAL ACTION OF HEAT AND COLD.

Read before the Chicago Pathological Society, January 11, 1887.

BY G. FRANK LYDSTON, M.D.,

LECTURER ON GENITO-URINARY AND VENEREAL DISEASES IN THE CHICAGO COLLEGE OF PHYSICIANS AND SURGEONS; SURGEON TO THE WEST SIDE DISPENSARY.

In view of the fact that modern medicine is chiefly occupied in bacteriological investigations of a more or less practical nature, it is perhaps too much for one to expect a subject as old and apparently well-worn as that selected for discussion in the present paper, to attract much attention, or excite a great deal of interest. I am convinced, however, that there are those present who, if they so choose, can express views upon the action of heat and cold, and upon hydrotherapy in general, which will be both interesting and profitable. A desire to hear such expressions of opinion upon a subject in which I am greatly interested, rather than the hope of adding greatly to our general fund of information, must be my apology for presenting this paper.

The usefulness of water in its various forms in the prevention and treatment of disease is very great, and its applications to pathological conditions are so manifold, that there are few subjects of a therapeutical character so worthy of the attention of the physician. Simple as the subject may at first appear, the important part which water may be made to play in the management of various diseases is but little understood by the mass of the profession. The application of water as a panacea for all our ills, and the extravagant claims of the system of exclusivism known as "hydrotherapy," are of course fallacious, and are so often obscured by absurdities and dogmatic sophistry, that we are naturally inclined to condemn its claims to efficiency *in toto*. Strange as it may seem, the first shaft of ridicule aimed at this system of exclusivism was hurled, not by a medical man, but by that "prince of satirists," René Le Sage. Nearly two centuries ago, this author immortalized the hot-water craze in his "Dr. Sangrado." Tradition tells us that this was not an aimless thrust, for the object assailed was no less a personage than the lean and lank Dr. Hecquet, Dean of the Parisian Faculty.

It would be impossible for me to discuss in detail so comprehensive a subject as the therapeutic action of water within the limits of this paper, and it will be impracticable to avoid touching upon points which are already more or less familiar.

The therapeutic use of water is of quite ancient origin, and inasmuch as primitive man must necessarily have familiarized himself with the properties of the more common substances with which he was surrounded, it would be strange indeed if he had not discovered the value of water in disease at a very early period. Admitting that he did appreciate its value, it is certainly remarkable that nothing was written upon the subject until 1702, when Sir John Floyer, stimulated by his observations upon the popular application of certain mineral springs in his vicinity, wrote his noted work, "The History of Cold Bathing, both Ancient and Modern." Following him, Hahn, of Silesia (1738), and the renowned Currie (1797), wrote treatises upon the subject. In 1804 no less a man than Prof. Oertel, of Ansbach, became a convert to the teachings of Hahn. It was not until 1829 that any attempt was made to construct a distinct system. In that year, however, Vincenz Priessnitz, who was an untutored farmer of Gräfenberg, Austria, formulated a system of hydrotherapy which, however glaring its faults from a scientific standpoint, was marvellously clear and accurate in its details. It was not long after the promulgation of the views of Priessnitz before hydrotherapy, as an exclusive system of therapeutics, became very popular, and "water-cures" and bathing establishments sprang up rapidly in Germany, England, France and America. This was due to the ardent disciples of Priessnitz, and not to him, as he himself never wrote a line upon the subject.

The comparatively recent date of our recorded knowledge of the uses of water is especially surprising when we note the sagacity of the lower animals. M. Delaunay, in a recent memoir to the Biographical Society of London, has dwelt at some length upon the therapeutic intelligence of animals, and makes special mention of their knowledge of cold water dressings for wounds, and of cold baths in fever. When a dog is suffering with a fever, he will not only drink large quantities of water, but will often plunge into a running stream and remain submerged for a considerable time. Wounded cats, dogs and horses have been known to remain in a pool or stream of water until their hurts were healed. Graves selected as his epitaph "I fed fevers;" Currie should have

selected one reading, "I cooled fevers." A judicious avoidance of drugging, and a combination of cooling and feeding, saves fever patients to day who less than a century ago would have been bled, blanketed, starved and purged into untimely graves.

It is impossible to present, even in a general way, the therapeutical action of water, without dwelling upon the influence of heat and cold upon the animal tissues. This is especially true of its external uses, in which its action mainly depends, not upon its own physical properties, but upon the temperature at which it is applied. It is obviously illogical to arrange the phenomena resulting from the use of the hot bath and the spinal ice-bag under the common head of "hydrotherapy," but it would be impracticable to separate the effects of a mere variation in temperature from those of the bath *per se*. In a less degree this statement will also apply to the ingestion of hot water, it being difficult to say what proportion of the benefit thereby derived is due to the water *per se*, and how much to the heat. The heat imparted to the viscera, and the increased amount of fluid in the gastro-intestinal tract, and in the blood after its absorption, being alike powerful therapeutic results, it is difficult to differentiate them. In a general way it may be said that there is no difference between the effects of a local hot bath, and those of a hot poultice, so that in speaking of the action of moist heat in any form, we must relegate the matter to the domain of hydrotherapy, although it is hardly fairer than to classify the action of a hot brick or a hot water bottle under the same head.

In discussing the therapeutic uses of any remedy, it is customary to consider its various local and general effects in health and disease, and to attempt the explanation of its action upon purely physiological grounds. This plan may be most fittingly applied to the remedy at present under consideration. The explanations usually given of the action of hot and cold water when applied to the animal tissues, are based entirely upon practical observations and theoretical reasoning upon those resultant phenomena involving vascular changes, and the hypothetical tissue changes which are brought about by nervous influences, vaso-motor or inhibitory. Indeed, we are inclined to attempt the explanation of many physiological and pathological processes, and the action of many remedies, by the nervous influences, sympathetic or spinal, involved in the various phenomena, or by the vascular and gross tissue changes produced by these nervous influences. Inasmuch as these changes are all that can be determined by actual observation, it remains to be considered whether theoretical and analogical reasoning will enable us to determine upon the ultimate physiological basis of such phenomena. Now, if we analyze these phenomena, and the tissues involved in their production, we will find something behind all, the reaction of which will explain the various changes most satisfactorily. I refer to the protoplasm or basic substance of the tissues.

The rôle of protoplasm as an entity, independent of vascular and nervous influences appears to me to be a most important one, and too little thought of in our studies of nutrition, and the action of remedies. We are taught that protoplasm, even before it has been differentiated sufficiently to arrive at the dignity of a cell, has properties and functions which are but the prototypes of those possessed by the animal body as a whole. It is contractile, irritable, and automatic; receptive, assimilative, metabolic, secretory, respiratory, reproductive, and excretory.[1] Such are the properties of the amœba, which is but formless protoplasm; and of how much greater importance these functions become when, through differentiation, the protoplasm is exalted to the dignity of a cell, is illustrated by the experiments of Cohnheim and Waller, who, in 1867, so clearly demonstrated the properties of the leucocyte. If, then, we consider the matter, we may conclude: 1, that every living tissue has certain vital properties by virtue of its component cells; 2, that the cells of a tissue or organ have certain special properties and functions, few in number, by virtue of their differentiation; 3, that the essential or main vital properties of the cells are not due to their differentiation, but are possessed by them simply by virtue of the protoplasm of which they are composed. Bichat conveys a somewhat similar idea, although not so literally expressed, when he speaks of "the vital properties of tissues."

In attempting the explanation of the physiological action of heat and cold, we will consider, not the tissues as a whole, but the protoplasm or basic substance as an entity; and as a warrant for this, the following proposition may be advanced, viz.: *Tissues are endowed with certain properties which we term vital, because the cells composing them have vital properties, and these cells are possessed of vital properties, because the material of which they are composed has vital properties and functions independent of those qualities acquired through its differentiation into cells, just as the latter have certain properties and distinguishing characteristics independent of their aggregation into formed elements of tissue.* Their higher functional evolution, of course, depends upon their aggregation and organization into tissues and organs, but apart from this, their elementary properties prevail. It is upon modifications or perversions of the vital properties of tissue (*i. e.*, its protoplasm), that pathological phenomena depend, and the science of therapeutics depends upon the correction of such perversions, by the action of remedies.

There is a class of diseases which, in the absence of perceptible change in the tissues, macroscopical or microscopical, we have been compelled to term "functional" in lieu of a better name. The number of these diseases has steadily grown smaller, *pari passu* with the discoveries of chemistry and microscopy; but there are still remaining ailments which medicine confesses itself unable to account for, although loth to accept them as "functional." May not the morbid condition in many such cases consist of a perversion of the life properties and functions of the protoplasm of the affected part, too obscure to be demonstrated by any known method of research, and involving certain occult derangements of

[1] Text-book of Physiology. By Michael Foster.

tissue metabolism? The development of medical science in this direction will probably be through a more perfect knowledge of physiological chemistry. Judging from the results of the experiments of Gautier and Selmi, we are already beginning to get glimpses of light. Certain it is that the discovery of ptomaines and leucomaines is destined to be of great pathological as well as physiological importance.

Among the modern writers who appreciate and forcibly present the importance of protoplasm as an entity in biology, may be mentioned Huxley and Martin,[2] and Clevenger.[3] These eminent authorities, in describing the life history and properties of the amœba, have practically presented the independent vital properties of protoplasm, as the basis of all the phenomena of organic life, and in a most striking manner. Based upon deductions from the writings of these authors alone, we might venture to advance the following as an excellent proposition, and one which is apt to prove serviceable in the study of all physiological and pathological processes, viz.: As are the properties of its protoplasm, so are the properties of the cell, and the latter are always subservient to the former. A cell without protoplasm is impossible, but the protoplasm, unorganized, has still its distinctive properties and functions, albeit they may be intensified by differentiation.

We are not lacking in other authorities who are convinced of the independent importance of protoplasm in the phenomena of life, for some of our most noted biologists dispute the dictum of the great master, Virchow, in his doctrine of "*omnis cellula e cellula.*" Heitzmann,[4] and following him, Stricker, claim that the tissues are built up of small masses of a homogeneous undifferentiated basement substance (protoplasm, "bioplasm"[5] or "bioplasson"[6]) bound together by a delicate reticulum of fibrillary structure. Elsberg, in his studies of hyaline cartilage, demonstrates the importance of the same substance. There are, then, many excellent authorities for the position assumed in the present paper, although I am not prepared to accept the views of the biologists last mentioned as to the unimportance or non-existence of the cell in organized tissues.

To apply the theory advanced to the explanation of the action of heat and cold, or of any other agent capable of making a definite impression upon living tissue, we may accept the proposition that the changes which are induced by such agents are but a manifestation of the aggregate activity of the various cells involved, they being the primal factors in the various physiological or pathological phenomena. In this, they act simply as differentiated protoplasm. The nervous currents may be said to be merely special manifestations of protoplasmic activity, resulting in an alteration of the molecular arrangement of the cells and fibres constituting the nervous cord, and of the special collection of cells termed a nervous centre, which presides over the nerve and is responsible for its special functions. How many and what vascular effects may result from simple protoplasmic changes in the venous and arterial walls, would be difficult to demonstrate or even conjecture, but that definite effects do result from such changes is quite probable. Could they be discovered, we would undoubtedly be greatly enlightened upon the phenomena of inflammation. It may be assumed, then, that perturbations of bioplasmic activity are the basis of many pathological conditions, and especially those of an inflammatory character, and as a corollary we may accept the theory that a stimulation on the one hand, or a depression on the other, of bioplasmic activity, will explain the effects of the application of heat and cold under certain conditions of disease.[7]

It is always essential in assuming a definite position regarding a therapeutical problem, to attempt the reconciliation of conflicting elements in the form of apparently contradictory facts. This is especially necessary in the present instance, inasmuch as the profession generally accept the view that there is no essential difference in the action of heat and cold in inflammation. From a clinical standpoint, this appears to be true in acute sthenic inflammations, but that the beneficial effects are produced in the same way, is negatived by the difference in their action upon healthy tissues, when applied at a temperature short of that required to completely destroy vitality. The surgeon who believes implicitly in the theory of the similar action of heat and cold, would be apt to find himself in trouble if he applied his theory indiscriminately. Surely, the same line of treatment would not be equally beneficial in a robust patient with a traumatic arthritis, and a broken-down hospital patient with phlegmonous erysipelas.

Again, it would hardly be proper to treat a chronic synovitis upon the same principle as an acute joint inflammation. In fact, the more carefully we study the subject, the narrower the range of the indifferent application of heat or cold becomes. Life, as defined by De Blainville, "is a double internal movement of composition and decomposition; at the same time general and continuous." One of the principal elements of life, therefore, is tissue metabolism. Heat favors chemical changes in Nature's laboratory, as well as in that of the chemist, and it consequently favors physio-chemical as well as inorganic chemical processes, and interchange of ele-

[2] Practical Biology. By Huxley and Martin.

[3] Physiology and Psychology. By S. V. Clevenger, M.D.

[4] Op cit "Progress of Biology in Europe." New York Medical Record, December 29, 1883.

[5] Lionel Beale. Disease Germs, their Nature and Origin.

[6] L. Elsberg, M.D. "Researches in Hyaline Cartilage." New York Medical Record, December, 1883.

[7] As an illustration of the powerful influence which changes of temperature exert upon living protoplasm, I would direct attention to the phenomena attendant upon the incubation of the chick. The protoplasm of the egg contains the inherent energy, or potential vitality, necessary to develop a chick, but it requires the influence of steady and continuous heat to develop the dynamic vitality requisite for the formation of a living animal. This illustration is in itself sufficient evidence of the important influence of warmth over physio-chemical and strictly physiological changes. The disastrous effect of chilling is obvious, and even the instinct of the mother fowl teaches her how long she may safely absent herself from the nest. It is well known that the conditions under which the human ovum develops are essentially the same as in the incubation of the chick. As an apt illustration of the disastrous effects of cold upon the vitality of cells, the effects of cold water upon living spermatozoa may be cited.

There is a strong analogy between the process of repair in wounds and inflammations, and the development of the ovum, and the moderate and continuous application of heat favors this process. In preparing a protection for the child, Nature has surrounded it during intra-uterine life by a warm, fluid environment.

mentary molecules. If, as has been claimed, inflammation depends primarily upon retarded tissue metabolism, it is quite easy to understand how moist heat will act beneficially, from a purely chemical standpoint. This fact would also explain the apparent paradox of an acute inflammation being benefited either by cold or heat, the former affecting chiefly the attendant vascular phenomena and hypernutrition, while the latter, aside from its merely emollient effect, tends to remove the original cause. The balance of benefit, even in acute inflammations, is in favor of moist heat. The prolonged application of cold is apt to prove injurious, and to induce pus formation by depressing the vitality of the exuded cells. The prolonged application of heat is rarely productive of injury, and if pus forms it is in spite of, and *not* because of it.

With reference to retarded metabolism giving rise to hypernutrition, the latter appears to be the result of a vicarious strain upon the tissues surrounding the original focus of irritation, and is itself followed, after a time, by retarded chemical change, hence the inadvisability of prolonging cold applications. It is as a result of these changes and of the pressure of inflammatory exudate that necrosis of various tissues occurs in certain inflammations.

An interesting theory of inflammation has been recently propounded by Lauderer, of Leipsic.[8] This is termed by the author "the mechanical theory of inflammation." It implies that there exists a normal balance or equilibrium between the pressure of the circulating fluid and the elastic tissue cushion surrounding the blood-vessels. A diminution of the tissue pressure without, by wasting of tissue from traumatism, or blood infection with secondary perversion of nutrition, gives rise to hyperæmia and the special phenomena of inflammation. Thus it may be observed that this theory, like that which is based entirely upon vascular and nervous phenomena, implies that inflammation is a definite effort at repair; in the theory in question, an effort at restoration of equilibrium. In presenting his theory, Lauderer claims, and with reason, that, as inflammation is merely a reparative process, it is not well to antagonize it, hence he recommends warm or hot applications, and deprecates the use of cold, save as an anæsthetic. The theory of this author is logical enough, but we cannot say as much of his deductions, for even a natural attempt at repair may be misdirected and perhaps destructive, and thus require limitation, and where cold will accomplish this, it should be used. It will be observed that with Lauderer, the balance of benefit has appeared to be in favor of heat in inflammation.

It would occupy entirely too much time were I to attempt to enumerate the various conditions which I believe to severally indicate the application of heat or cold as remedies for inflammation, but I will venture to formulate a few general considerations in their use, reserving a few of their more interesting and special applications for the conclusion of my paper.

1. Acute sthenic inflammation will be likely to be benefited by either hot or cold applications, if properly used.

2. Caution is necessary in the use of cold, and, as a rule, it should not be continued after the violence of the inflammatory process has sensibly abated.

3. Warm or hot applications are, on the average, productive of better results than cold, and they rarely, if ever, are productive of injury.

4. In the use of either agent, the temperature should be kept as equable as possible, for nothing is so injurious as alternations of heat and cold in acute inflammation.

5. In all chronic inflammations and hyperplasias, heat is the most efficient agent, by virtue of its stimulating properties. By alternating with cold, this stimulating effect upon the absorbents and the walls of the blood-vessels becomes still more marked.

6. In all inflammations characterized by general depression and local inhibition of tissue vitality, cold should never be used. In such diseases as erysipelas, gangrene, phagedæna, etc., heat is a most valuable agent. As a matter of personal experience, I can certify to the great benefit to be derived from hot applications in phlegmonous erysipelas. The improvement in the results obtained by hot applications in such cases was most marked in my hospital experience, as contrasted with those obtained by cold, which had been used almost as a matter of routine for a considerable time.

7. In all cases in which the prevention of suppuration is a desideratum, moist heat is indicated. This is contrary to the prevailing notion that a hot poultice forms "matter." Heat will not cause pus formation, but cold may do so, if its application be too prolonged.

8. In cases in which the prolonged use of hot poultices or fomentations causes a sodden and baggy condition of the part, this result is due, not to the heat *per se*, but to the moisture.

But the use of heat and cold is not restricted to the treatment of local conditions of inflammation, for they are prescribed in various general conditions. Since the time of Currie, cold has been especially useful in the treatment of fever. There is probably, in febrile conditions, excessive activity of the tissue protoplasm. Whether this is a result of an attempt to eliminate the *materies morbi* of the disease, or occurs as a consequence of a morbid impression upon the nervous system, is a matter of but little moment; the result is the same, and consists of an excessive production of heat, which is immediately dangerous to life, and which depends on an exaggeration of the special function of protoplasm known as metabolism. Now, we find that the temperature will be lowered and irritability lessened by cold sponging, and it is hardly probable that the benefits are due directly to refrigeration, for the abstraction of heat must necessarily be slight, and we find that a moderately warm or tepid bath will accomplish the same, and often more effectually.

It seems probable, therefore, that the benefit is due to a temporary inhibition of protoplasmic activity, both in the tissues generally, and in the nervous centers. In health, this is followed by a beneficial

[8] Volkmann's Sammlung klinischer Vorträge, No. 259.

reaction if the bath be not too prolonged, but in fever, the reaction must be very slight, for were it not so, cold baths would be fatal in every case of pyrexia of high degree. That the vital depression may be carried to extremes, has been demonstrated by all who have tried Liebermeister's system of cold baths in typhoid, and it is well to remember that reaction is much slower in fever than under normal conditions. There is one method of applying cold in fevers which is extremely beneficial and productive of refrigeration with little or no danger of depression. This method is that of Stephan, and will receive attention later on.

In all conditions in which stimulation is indicated the general hot bath is of value. Thus it is of service in conditions of shock, and in such diathetic and cachectic affections as gout, rheumatism, malaria and hospitalism. In conditions of nervous depression the hot bath should not be prolonged, for while its primary action is stimulating, it produces secondarily systematic depression and relaxation. Over stimulation produces necessarily exhaustion of cell vitality. In convulsive affections it will be found that the hot bath produces primarily exaltation, and it is not unusual for a child with convulsive symptoms to develop a paroxysm the instant it is placed in the hot bath. The temperature of the water under such circumstances should not be extreme, or more harm than good will be accomplished. In the diathetic affections mentioned the hot bath not only stimulates tissue metabolism and waste, but also stimulates the various eliminative areas, notably the skin.

Much more might be said upon the important subject of hot and cold bathing, but our time is limited, and I will therefore briefly formulate a few general considerations.

1. Hot and cold baths in health and disease act by virtue of their effect upon tissue protoplasm.

2. The general application of heat to the animal body produces primarily an increase of tissue metabolism, an exaltation of the nervous system, and an increase of elimination. Secondarily it produces as a consequence of over stimulation, an exhaustion of vital power which persists until the tissue protoplasm has had time to restore itself. These effects vary considerably according to the degree of heat and the duration of its application. The indications for the use of heat therefore are: 1. Nervous depression. 2. Convulsive and spasmodic affections. 3. Diathetic or cachetic conditions in which peccant materials are present in the blood and tissues. Caution is necessary in applying it in the condition of plethora.

3. The general application of cold is productive of effects for the most part diametrically opposite to those produced by heat. If the patient be robust and healthy, and the application of short duration, there occurs a temporary depression of vitality, superficial in character, almost inappreciable in amount, and almost immediately followed by a healthful reaction and increase of tissue metabolism. As a consequence, all the vital functions are exalted.

As applied in pyrexia, this depression is more prolonged, and is not followed by a proportionate degree of reaction. It is an inhibition of tissue metabolism and heat production, rather than a direct abstraction of heat, that is productive of benefit. This inhibition of vital power is modified by the degree of cold, the duration of its application, and last, but not least, the inherent vitality or resisting power of the patient. It will be seen, therefore, that the cold bath is a two-edged weapon, and is to be handled with caution.

It is well to remember, that the sudden application of cold to the surface of the body, is liable to produce marked internal hyperæmia and congestion, which may prove disastrous in diseased conditions of the viscera and vascular system. The indications for the cold bath are: 1. Conditions of debility, not too pronounced. In these conditions, its use should consist only in its transitory application, the reactionary effect being that from which benefit is to be expected. 2. Febrile conditions: In these conditions its use must be prolonged, in order that direct cooling of the tissues should be produced. These effects are modified by circumstances already indicated, and a careful selection of patients and measures is necessary.

The theory of the independent importance of protoplasm in the phenomena of life, is not only of importance as bearing upon the external application of moist heat and cold, but it is serviceable in explaining the effects of hot and cold water when ingested in greater or less amount.

It is a well known fact that cold water taken internally is capable of retarding the digestive processes under certain circumstances, especially if the patient be weakly. A glass of ice-water taken before or during a meal, especially if one be warm and fatigued from exercise, will often cause a sharp fit of indigestion due to a diminution of gastric secretion and perhaps reflexly, of intestinal secretion. That the latter results from direct chilling of the intestinal surface, is hardly probable, for the fluid must almost necessarily be warmed sufficiently to obviate any directly evil effect, by the time it passes the pylorus. That simple dilution of the gastric juices cause the indigestion is very doubtful, for a glass of hot water has a directly opposite effect.

It is generally held that a direct blanching of the mucous surface is caused by the application of the cold water, but in an organ so vascular as the stomach, the temperature of which is always above the average blood heat, such an effect is of comparatively minor importance, unless successive doses of cold water are taken. If we assume that the effects noted are the result of a direct inhibition of the vitality of the protoplasm of the secretory cells, we have certainly a logical explanation. If the condition was merely one of vascular spasm reaction would speedily come on, and the digestive process would be more energetic than ever. We notice that in the case of the cold douche applied to the skin, reaction is very beneficial and the activity of its secretory apparatus is improved. That the application of cold to the skin is not productive of depression of secretory activity unless it be continuous, is due to the comparative density of the cuticle, which protects the more

sensitive protoplasm of the secretory cells. The depressing effect of the continuous application of cold, has already been alluded to.

The beneficial effects of hot water, in certain digestive disturbances, may be explained by the stimulating effect which it exerts upon the secretory cells and muscle fibres of the digestive tract. Caution is necessary in its use, as over-stimulation may result injuriously, and enhance the disturbance already existing.

The effects of hot and cold water when taken internally are first exerted locally upon the gastro-intestinal mucuous membrane, but in common with all absorbable substances, etc., has certain effects after absorption into the blood. These effects are of two kinds. 1st, those upon the tissues, and 2d, those upon the emunctories from a functional standpoint. While these effects are usually beneficial, and the fluid practically flushes out the tissues, sewers and drains of the body, thus carrying off effete material, they may be injurious. The hyper-investigation of water or fluids containing it, is apt to prove deleterious in a general sense, for the system, so to speak, becomes supersaturated with fluid, and the loculi of the connective tissue distended and sodden. Under these circumstances, there is exclusive imbibition of fluid, by the basement substance or protoplasm of the various cells, and it might be inferred *a priori*, that a consequent sluggishness of function would ensue. This explains in part, the manifest perversion of the nutritive functions in those who consume large quantities of fluids, whether spiritous (providing the alcohol be not in excess) or otherwise. When oxidation is thus interfered with, we have an excessive accumulation of fat, or what often passes for such, a thickened, soggy condition of the areolar membrane.

Richardson says: "The signs of laxity of muscular fibre, of thinness of the blood, of pallor of the face, and of nervous excitability with deficiency of power which mark so many of our women, are often due to the consumption of an excess of liquid food." He dwells with especial emphasis upon the evil effects of beer and other watery alcoholic beverages, upon habitual drinkers. The explanation which he gives of the evils resulting from this excessive tippling, is a purely mechanical one, and implies merely a mechanical obstruction to nutrition from distension of the interstices of the areolar membrane. I believe, however, that this is hardly comprehensive enough. It is probable that the essential morbid condition is an inhibition of protoplasmic activity.

We are all familiar with the manner in which the basis substance of living cells will imbibe water through the limiting membrane, by endosmosis[6]

Undifferentiated protoplasm will do the same, although we could scarcely term the process, osmosis. There are doubtless lost at the same time, certain saline and other principles, which are of the utmost importance to the vitality of the cell. Necessarily, inhibition of function must result, and in direct proportion to the inhibition of protoplasmic activity, general vitality is impaired, for as Maudsley aptly defines it, "vitality is but the aggregate manifestation of independent existence of individual cells."[7] The effects upon the cell which I have mentioned, consist really, in mechanical hydration, but it is possible that chemical hydration occurs in a greater or less proportion of cells, and this is most disastrous. According to Hoppe-Seyler, "living protoplasm consists of anhydrous molecules in a hydrated medium." The instant the protoplasmic molecule is hydrated (*i.e.* the instant its chemical composition is modified by the addition of the elements of water) it dies, and consequently the cell of which it is an integral part, dies. It is evident that a certain equilibrium of the amount of water contained in the molecules of living tissues is necessary to their integrity, and that either marked increase or depreciation is detrimental.

This view of the physiological action of water may be applied to the internal treatment of fever, and will explain the instinctive demand for cooling drinks experienced by all animals under such conditions.

We have in febrile conditions: 1. The existence of a materies morbi in the blood and tissues, whether primarily as a specific cause of disease, or secondarily as a result of tissue metamorphosis (*e. g.*, in inflammations). 2. Excessive tissue waste due essentially to hyper-metabolic activity of the protoplasm. 3. A high grade of temperature resulting from this excessive metabolism. 4. A rapid loss of water consequent upon the high temperature. 5. Sluggishness of function of the emunctories. By the administration of large quantities of water we answer all the indications presented by these essential elements of fever, viz.: 1. Dilution and removal of the specific poison, or the products of oxidation, as the case may be, and prevention of toxæmia, both hetero and auto-genetic. 2. Inhibition of protoplasmic activity and consequent diminution of heat production, these results being due mainly to hydration. 3. Actual refrigeration of the tissues and consequent diminution of the immediately disastrous effects of heat upon the heart muscle. 4. A restoration of fluid to the tissues. 5. A stimulation of the various eliminative areas.

It is well, then, in our modern practice of refrigeration in fever, to remember certain indications which even the instinct of the dog fulfills, and which are much more direct and urgent than those for the external application of water. Too often the patient's thirst is ignored, while his heat of skin is magnified in importance.

It is well to bear in mind that concentrated alcoholic beverages when given in fever should be well diluted, for the affinity of alcohol for the water of the tissues is apt to neutralize its possible benefits in other directions. The morning thirst of the toper is an every day illustration of this action of the stronger alcoholics. It will be found that alcoholics may be best administered to fever patients in soda or seltzer water, and it is safe to say that the moderate drinker may attain the maximum of safety by a similar dilution of his daily beverage.

While it would be impracticable to discuss in de-

[6] Diseases of Modern Life.

[7] The Theory of Vitality, by Henry Maudsley, F.R.S.

tail the various applications of water, hot and cold, there are a few of the more recent uses of these agents in therapeutics that I desire to mention.

A few months ago Stephan, of St. Petersburg, published an article upon the use of the ice-bag in fever. His method consists of the application of ice-bags to the neck upon each side, just above the clavicles. The theory advanced is that the large volume of blood coursing through the carotids and internal and external jugulars is directly refrigerated, and the blood thus cooled enters the heart almost immediately to be redistributed throughout the body.[11] Since the publication of Stephan's article I have tried the method repeatedly, and have to look upon it as one of our most valuable resources for controlling fever. I have usually applied an additional ice-bag to the epigastrium, thus taking advantage of the relatively large amount of blood in the peritoneum and intestines. The directly sedative effect upon the cervical ganglia and the solar plexus obtained by this method is also an element in its favor, for the intimate relation of the sympathetic centers to the trophic changes of fever or perhaps heat production is generally admitted. In my opinion this method if generally adopted, will supersede the general cold bath. It is easy of application, not likely to be injurious if used with even a moderate amount of caution, is rational in theory, and better than all, it can be applied more or less continuously as occasion may require. The bags may safely be left in charge of any intelligent person, which cannot be said of the general cold water bath.

In substantiation of the claims advanced I take the liberty of presenting the following brief clinical notes:

Case 1.—Typhoid with complicating croupous pneumonia.—The patient was delirious at night from the first day of her illness. The stools were characteristic. The temperature upon the fourth day was 105.5° F. Quinine and cold sponging reduced it but 1° at any time, and these remedies were faithfully tried. Antipyrin in 10 grain doses was no more effective, and produced marked depression and was discontinued as unsafe, general prostration being profound. On the fifth night the temperature was 105.8° F., and the patient was wildly delirious. Bromides and opium within the limits of safety were of no service. Ice-bags were applied to the neck and abdomen, and for about two hours it was necessary to hold the patient by main force to prevent their displacement. At the end of that time she fell into a quiet sleep and slept for about four hours, the temperature having meanwhile fallen to 101° F. The ice-bags were now removed and ordered reapplied whenever the temperature rose to 102° F., and to be removed whenever the patient complained of discomfort. There was no more delirium and the patient slept a great deal. At the end of the second week convalescence was established, the temperature having been no higher than 102° F. since the first application of the ice-bags. In this case the treatment appeared to change the entire course of the disease from a severe to a mild one.

Case 2.—Typhoid, seen in consultation on the evening of the thirteenth day of the disease: The temperature was 104° F., and had stood at this point for some days. Antipyrin and quinine had not been of any service. Ice bags were applied to the neck and abdomen, and by morning the temperature had fallen to 101°. It afterwards rose, but never above 103° F., and the case was apparently hopeful, when fatal perforation and peritonitis occurred.

Case 3.—Puerperal Septicæmia.—Patient was taken with a violent chill on the fifth day after a tedious and difficult instrumental delivery. The temperature rose at once to 104° F., and in spite of intra-uterine irrigation persisted with but slight remission, and on the third day rose to 106° F. At this time she was seen in consultation by Dr. A. Reeves Jackson. Ice-bags were applied as in the previous cases, intra-uterine injections being meanwhile persisted in. In less than ten hours the temperature fell to normal, and never again rose above 102° F., and that only during the second night after the bags were used. They were at once reapplied and the temperature again fell, the thermometer registering 98° F. There was no further rise of temperature, and in a few days the patient was convalescent.

Among the more recent applications of hot water, is its use in gonorrhœa. As usually applied by continuous irrigation through the double current catheter, this method of treatment is likely to prove too stimulating in acute gonorrhœa, and the passage of the tube is likely to cause serious complications. I have used in preference ordinary urethral injections of hot water with a large syringe. The injections are to be given repeatedly for at least thirty minutes and used as hot as can be borne. It has been my experience that this method of treatment is adapted only to the more chronic forms of urethritis.

Inflammation of the prostate and vesical neck is benefited by hot enemata frequently repeated.

The recently revived hot water craze has directed attention to the internal uses of hot water, and although a great deal of rubbish has been written upon the subject, there is much of good in the hot-water system. In cases of atonic and flatulent dyspepsia, and in such functional perturbations of the kidney as Sir Andrew Clark describes under the head of "renal inadequacy," the free use of water is to be commended. Hot water taken internally is an excellent stimulant and diaphoretic, and will aid one in performing muscular labor to a remakable extent. This I know from personal experience, and some of my friends who have tried it at my suggestion while working in the gymnasium, admit that they can do more work and obtain more benefit while drinking freely of hot water. Unlike other stimulants, hot water is not followed by disagreeable effects. It is my belief that hot instead of cold water, should be drunk while in the Turkish bath. By taking hot water those individuals who complain that they do not perspire will be greatly benefited.

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[11] Jour. of the Am. Med. Association, Sept. 25, 1885.

CLOSURE OF THE JAWS AND ITS TREATMENT.

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At the meeting of the American Surgical Association, June 1, 1883, I read a paper on "Closure of the Jaws and its Treatment." In this paper, which was published in the first volume of the *Transactions of the Association*, I described the two forms of permanent occlusion of the jaws—one due to the formation of osseous or cicatricial bands between the alveolar processes, and the other dependent upon ankylosis of the temporo-maxillary articulation, either fibrous or osseous in character. I gave also a *résumé* of the methods of operation which had been suggested and practised for the relief of these conditions, reported the almost universal failures of these methods in obtaining successful results, as gathered from the reports of cases, and stated the objections to their employment. That a better understanding may be had of the subject, I give, at this time, this *résumé*.

A *résumé* of the methods of operation which have been suggested for the relief and cure of permanent closure of the jaws shows that they have been as follows:

1. Division of the cicatricial tissues. Section of the masseter and temporal muscles, as originally suggested by Carnochan, when division of the cicatricial bands is insufficient.

2. Excision, more or less complete, of the cicatricial bands or osseous formations, and the subsequent employment in case of the former, for a long period of time, of wedges and levers to maintain the separation of the jaws. Transplantation of mucous membrane to cover the surface of the wound, as suggested by Dieffenbach, or transplantation of skin, as practised by Jaesche.

3. Division of the cicatricial tissues, and the adaptation of metal shields, not only to prevent recontraction, but to re-establish the sulcus of mucous membrane at the base of the alveolus.

4. Dieffenbach's method of simple division of the ramus of the jaw—and the formation of a false joint *behind* the point of contraction.

5. Esmarch's suggestion that the joint be formed in front of the contraction, and that a segment of bone be removed for this purpose—by external incision.

6. The formation of a false joint *in front* of the contraction by simple division of the bone, made by forceps applied within the mouth—Rizzoli's method.

In closure due to ankylosis of the temporo-maxillary articulation, the methods practised are:

1. Formation of a false joint by exsection of the jaw, by external incision (Carnochan's suggestion), or the division of the ramus from within the mouth, either by saw, forceps, or chisel.

2. Exsection of the condyle with a portion of the neck, the incision being external, as practised by Professor S. D. Gross.

The objections stated were as follows:

1. To incision and excision. The reformation of the cicatrix and the great pain to which the patient is subjected in the use of wedges, levers, and screws—the difficulties of securing flaps of mucous membrane and skin from adjacent parts and their successful transplantation. The almost universal failures.

2. Division of the Cicatricial Bands and Use of Shields. The pain and inconvenience experienced by the patient in the use of the shields, and difficulty of obtaining the full coöperation of the patient in carrying out the necessary manipulations within the mouth.

3. Section of the Ramus *behind* the Contraction—Dieffenbach's Method. The difficulty of obtaining a permanent false joint after simple section of the bone.

4. Esmarch's Method. The loss of one-half of the jaw for the purposes of mastication, where excision is made in front of the contraction. Its inapplicability when both sides are affected, and the deformity which results.

5. Rizzoli's Method. The difficulty in accomplishing the formation of a false joint by simple division of the bone—the tendency to reunion being much greater than when a segment is removed.

Having given this *résumé* of the different methods of operation and the objections which I believed to exist against the accomplishment of entirely successful results by their employment, I described a method which I had practised in a case of jaw closure due to the formation of osseous and cicatricial bands, involving the left side, the result of a gunshot wound. The injury was received when the patient was 2 years of age, and the operation for her relief was performed on January 26, 1883, eighteen years later. The plan of operation practised, and which differed from those which had been employed, consisted in the exposure of the temporo-maxillary articulation by an incision along and below the zygomatic arch, the excision of nearly the entire ramus of the jaw with the coronoide and condyloid processes, section of the masseter, temporal, and external pterygoid muscles. The osseous plate which had formed between the alveolar processes on the palatal surface was sawn through, the saw having been introduced between the teeth to accomplish this purpose. The jaws were now separated to the extent of an inch. The subsequent treatment consisted in the daily use, for a period of four weeks, of my mouth-gag, during the formation of the artificial articulation, with the result of securing a separation of one and a quarter inches. About the middle of January, 1887, four years after the operation, the patient called upon me, and I found the separation of the jaws to be over *one and a quarter inches*, and the movements in every respect normal. The patient is unable to recognize any difference, in motion or in sensation, between the natural joint on the right side and that formed upon the left.

Since the time of this operation I have had six cases of jaw-closure, in four of which I have operated by methods somewhat different from that above described. Of the six cases five were due to bony ankylosis occurring in the temporo-maxillary joint.

In one, the buccal cavities on both sides were entirely obliterated by the formation of masses of dense cicatricial tissue, which bound the jaws firmly together and permitted the separation of the lips only. This condition followed an attack of noma, in which the tissues of the cheeks, except the integument, were entirely destroyed by the inflammatory action, the tongue and lower jaw on the right side being likewise involved, causing a loss of a portion of the former and necrosis in the latter. In the report of the first case, made to the Surgical Association, I stated that I had not divided the cicatricial band which existed, but had utilized it as a ligament; and I stated my belief at the time that such use could be made of these bands. In this case, however, the cicatricial bands were so extensive, reaching from the ramus of the jaw to the angle of the mouth, and were so unyielding that it became necessary to modify the plan of operation. The condition of necrosis demanded that the mouth should be opened at once, in order that treatment could be adopted. The bands were therefore divided by incision in the mouth, the cavity opened wide, and several spicula of dead bone were removed. Use was made of the mouth-gag to maintain separation of the jaws. Despite daily use of the instrument, reunion of the bands occurred at the end of six weeks, and almost complete closure was again effected. Division of the cicatricial tissue was a second time performed, and with the same result as in the first operation. At the expiration of two months the cicatricial bands were dissected out *en masse*, leaving the buccal spaces free. Reformation of the tissues followed, and, with their recurrence, closure, not, however, to the full extent.

The difficulties experienced in this case, and the failures which accompanied the methods employed, induced me to make an effort to effect division of the dense tissue by means of a ligature, believing that reunion could thus be partially, if not completely, prevented. In this expectation I was not altogether disappointed.

Having armed a strong-handled needle with double-twisted carbolized silk ligature, I passed it from the angle of the mouth backward between the integument and the outer surface of the cicatricial mass, and caused the point to immerge just behind the last molar tooth of the lower jaw. In this manner I surrounded the cicatricial tissue with the ligature, which was tied loosely and moved each day for a week, so as to establish a canal which would not readily close. At the expiration of a week I tightened the ligature slightly, and every third day for the next two weeks made slight torsion, passing a probe meanwhile along the track of the ligature. In this way the dense tissue was slowly divided, union not taking place at the bottom of the wound, and the jaws were separated *three-quarters of an inch*, sufficient for all practical purposes. The patient went to his home in the country. At some future time the remaining tissue may be divided by the ligature and separation of the jaws to a greater extent accomplished. The result obtained in this case, an example of occlusion by the formation of most extensive cicatricial bands, induces me to offer the method of slow division by ligature as possessing advantages over the methods heretofore suggested and employed.

Modifications in the method of depositing the ligature may be required in different cases. When the jaws are firmly locked by broad bands it may be necessary to pass the ligature from behind, introducing the needle externally just behind the posterior border of the cicatricial band, and carrying it forward to the angle of the mouth; then reintroducing the needle, it may be carried along the inner surface of the mass, and brought out at the wound made on the external surface. It may be deemed expedient in certain cases to divide the bands in portions rather than *en masse*. Care should always be taken to avoid implication of the duct of Steno.

Of the cases of synostosis of the lower jaw, two were due to traumatism. In one there were evidences of fracture of the neck of the condyle of the jaw, caused by a fall upon the chin; in the other, a kick by a horse had fractured the body and ramus of the jaw, and inflammation had attacked the articulation. The articulation upon the right side was affected in both of these cases; the injuries were received when the patients were 10 and 11 years of age respectively, and the operations for their relief were performed fourteen and seventeen years later, securing in each case a separation of the jaws to the extent of *one and a quarter inches*. In the one injured by a fall upon the chin there was marked recession of the lower jaw and an absence of full development.

In the third case, a boy 10 years of age, the bony ankylosis upon the left side had followed necrosis of the body and ramus consequent upon an attack of scarlet fever. Closure of the jaws had existed for four years. In this case *one and a half inches* separation was permanently secured.

In all of these I modified the operation employed in my first case, by effecting excision of the upper portion of the ramus, the coronoid, and the condyloid processes through the mouth, avoiding in this way an external cicatrix.

The method of operation is as follows: A straight sharp-pointed bistoury is introduced beneath the masseter muscle on a level with the last molar tooth of the lower jaw. Into the wound thus made the blade of an Adams' saw is passed, and the ramus sawn through. The periosteum, with the overlying masseter muscle, is raised by the periosteal elevator, and the wound thus enlarged. The insertion of the temporal muscle is now divided by a probe-pointed bistoury. The tissues on the inner surface are separated by the elevator, the bone seized by the lion-jawed forceps, and an effort made to dislodge it by forcibly twisting it outward. If it yields at the neck of the condyle, the process is afterward chisseled out. If sufficient space is acquired without removal of the firmly ankylosed process, it is permitted to remain, the object being to provide ample space for the formation of an artificial joint. Section of the masseter muscle is made if its tense condition demands it. Hæmorrhage which arises from the di-

vision of muscular arterial branches, and possibly of the inferior dental artery, is controlled by pressure effected by packing the wound-cavity with sponges. Wounding of the internal maxillary artery is to be avoided by careful use of the instrument in close contact with the bone in the upper and inner portions.

Section of the inferior dental nerve is likely to occur, producing anæsthesia in the teeth, and regions of the chin supplied by its mental branch. In one case in which this has occurred, I have observed a gradual restoration of the function. In another, anæsthesia still exists, although nearly a year has elapsed since the operation. The wound cavity is packed with iodoform gauze, 7½ per cent., and renewed every third day. Manipulation with the mouth gag is instituted at the expiration of a week, and maintained for a varying period—from six to eight weeks or longer, according to the requirements of the case. This manipulation gives no pain in the newly formed joint. In two instances the renewal of motion has caused pain in the sound articulation. In one of the patients exhibited this evening an attack of subacute inflammation occurred in the sound joint which required the application of three blisters to remove. The use of the ordinary chewing-gum, I have found, assists materially in maintaining the movements of the jaw during the formation of the false articulation. In one of the cases the restoration of the motions of the jaw stimulated the hair follicles, and gave rise to a marked growth of the beard.

EXOPHTHALMIC GOITRE: WITH REPORT OF A CASE.

Read before the Illinois and Iowa Central District Medical Association, October 14, 1886.

BY STELLA B. NICHOLS, M.D.,

OF DAVENPORT, IOWA.

This affection is characterized by three prominent symptoms: protuberance of the eyeballs, enlargement of the thyroid body, and palpitation of the heart. The name, exophthalmic goitre, relates to the first two of these symptoms. That it is defective, is proven by its failure to include the increased frequency of the heart's action, which is almost invariably the initial symptom, and is the only one of the so-called symptomatic triad which is never absent. Although ophthalmologists, like Demours, Mackenzie, Sichel and Desmarres, had already made mention of this affection, it remained for Graves to describe it as an individual complaint, which he did in 1835. Afterwards, from Basedow giving a fuller description of it, it was known as Basedow's disease, which is the name now given to the affection by German writers. American, English and French writers have adopted the name Graves' disease, as proposed by Trousseau. Cardiogmus strumosus, and exophthalmic cachexia are other titles by which it has been known.

There are cases in which one of these cardinal symptoms is absent. The exophthalmia is the event most often wanting; the palpitation, the goitre and the associated phenomena being the same as if coexistent with the exophthalmus. In other cases the goitre alone is absent. It occurs more frequently in women than in men, though it is by no means confined to the former sex. Niemeyer thinks that menstrual disorder, or perhaps the lack of red corpuscles in the blood, which so often accompanies such disorder, also seems to have some part in its production; but it is altogether inadmissible to regard such disease of the vaso-motor nerves as a mere part of that widespread disorder of innervation which occurs in hysteria, and to attribute the relaxed state of the vessels, or of their nerves, proceeding from the want of red corpuscles in the blood. Indeed, Basedow's disease is not especially prevalent in cases of severe hysteria or intense chlorosis, and in some cases even appears in persons free from both menstrual disturbance and impoverishment of the blood. Graves and his colleague, Stokes, took the view that the goitre and exophthalmus were dependent on the cardiac disorder. In some particular cases the disease has been attributed to fright or other mental excitement, or traumatic causes. Austin Flint believes that, "in view of the fact of the exophthalmia and the goitre being, in the vast majority of cases, bilateral, it seems rational to suppose the pathological nervous condition to be central rather than peripheral." Aitken believes that "the normal nutrition of the nerve-centres is impaired," and says "palsy of the vaso-motor nerves connected with the carotids, thyroid gland, and heart, is the explanation given of this disease;" that it coexists with wasting diseases, or supervenes upon them; such as leucorrhœa and menorrhagia in females, and hæmorrhoids in males. Amenorrhœa, long continued hæmorrhages, want of rest, and many other similar causes, have been assigned in different cases. Dr. Stokes says: "In young women, mental anxiety and the effect of terror may produce it."

Hammond does not accept the opinion that the disease is an affection primarily of the heart and the blood-forming organs, and thinks that we have no evidence to show that chlorosis or anæmia ever produce in their entirety the remarkable phenomena characteristic of Graves' disease. On the contrary, he thinks that we are justified in regarding it as an affection of the brain and medulla oblongata, and bases his opinion on the fact that the disturbance of cardiac action, the cough, nausea, and protrusion of the eyeballs, indicate the pneumogastric nerves as the organs through which the phenomena are manifested; and cites the absence of pupillary disturbance as one of the strongest circumstances against the hypothesis of sympathetic disorder. In the four cases which have come under my observation there has been uterine disease, and the sequel has seemed to prove that it was the primary cause of the disorder.

The first symptoms are usually palpitation of the heart and habitually rapid pulse, with other signs of nervous debility. The next symptom in order is generally an enlargement of the thyroid gland with violent beatings of the carotid arteries. Exophthalmus makes its appearance either at the same time, or a little sooner or later. The palpebral fissure is widely opened, closure of the lids is infrequent and

incomplete, while the upper eyelid takes but little part in the movements of elevation and depression of the eyeballs. Although these three phenomena may be said to constitute the pathological trinity of which the disease consists, there are cases in which the goitre may be almost if not entirely wanting, while in other cases the exophthalmus may be slight or absent.

The severity of each of these symptoms is variable. In addition to these cardinal symptoms, we may find minor manifestations such as cough, nausea, increase of temperature, profuse sweating, hæmorrhages from the lungs, nose or bowels, and sometimes œdema of the extremities. Emotional excitability is also increased. There are insomnia and various disturbances of sleep, headache, vertigo, neuralgia, mental irritability, and often depression of spirits. There may be disorder of digestion with constipation or diarrhœa. Anæmia and emaciation are usually present, and may be coexistent with more or less mental weakness. In women, menstruation is almost always either entirely absent or greatly diminished. There are rarely any marked disturbances of vision, and the movements of the eyeballs are usually normal.

The diagnosis of exophthalmic goitre is rendered comparatively easy by the usual prominence of the three characteristic phenomena. The heart is seldom organically affected; the protrusion of the eyeballs, although sometimes so great as to interfere materially with the closure of the lids, is not productive of pain, disorder of the globes, or impairment of vision. The enlargement of the thyroid rarely attains any great bulk, as in common goitre. Loud, and often musical murmurs, both arterial and venous, may be distinguished upon applying the ear to the enlarged gland.

The clinical history is an important factor in the diagnosis of the disease. Cohen tells us that the prognosis in those cases—the most frequent—in which there exists no sign of organic disease in the heart or other organs, is very favorable, though a long time often passes before the characteristic features of the disease entirely disappear. Aitken says "the result may be unfavorable, by reason of dilatation of the heart, with diminished functional power. The patient becomes cyanotic and dropsical, with dyspnœa. Death takes place also, but more rarely, by cerebral symptoms." Cases due to uterine disorders in which the functional derangement has not already induced organic disease of the heart, improve promptly upon removal of the cause. Of course, as a rule, recent cases yield more readily to treatment than cases of longer duration.

The causes and symptoms of the disease point very definitely to the proper treatment. Rest of mind and body, and the removal of those conditions which seem to have been important elements in the first production of the disease; generous diet, change of air and scene, and in short whatever has a tendency to invigorate the system. The excessive irritability of the heart and nervous system demand digitalis, the bromides, and other remedies of this class. Tonics, especially iron, should be used to improve the impoverished condition of the blood. Iodine has been quite generally used in the treatment of the enlarged thyroid gland, but whether used internally or applied to the swollen gland, it appears by itself to be of little use. Carpenter has found iodoform internally to be peculiarly efficacious in the treatment of this form of goitre. He ascribes the excellent results obtained, to some influence of the nervous system, rather than by its resolvent properties.

Trousseau relates a case of suffocation, caused by pressure of the enlarged thyroid body on the trachea, which was relieved by the application of ice to the neck, and the administration internally of digitalis.

Hammond relies upon the primary galvanic current as the principal agent for the cure of the disease. His rule is to make the intensity of the current as great as the patient can bear with comfort. He says: "One pole—a wet sponge—should be placed on the nape of the neck, and the other should be stroked down the skin over the pneumogastric—or sympathetic if the physician regards this nerve as the seat of the disease; it is impossible to act on one without at the same time affecting the other to an equal extent. This should be done daily, for five or ten minutes."

Pepper has effected a complete reduction of the thyroid enlargement, by the injection into the gland of a solution of ergotine, in addition to ergot, given internally. Some of our latest writers regard ergotine as being almost a specific in this disease.

Uterine troubles are to be removed, as they are believed to bear a special causative relation to the affection.

Four cases of exophthalmic goitre have come under my observation. All occurred in women; all presented the cardinal symptoms, distinctly marked; all suffered from uterine lesions, and all improved more or less promptly upon instituting appropriate gynecological treatment. Of course, internal remedies were used to control nervous excitability and other annoying symptoms, during the course of treatment. One of these cases has been particularly interesting to me, from the fact that it has been, throughout a typical case.

The patient, an unmarried woman, 23 years of age, consulted me because of amenorrhœa of seven months' duration. Upon inquiry I learned that shortly after the cessation of menstruation, she suffered greatly with palpitation of the heart, and extreme nervous sensibility. A little later exophthalmus gradually made its appearance. At about the same period she began to experience some difficulty in the deglutition of solid food, and by this symptom her attention was directed to the slightly enlarged thyroid gland. A little more than a month after the onset of the disease she became confined to her bed, by reason of nervous prostration and palpitation of the heart. In the meantime, all of the symptoms were greatly aggravated. At the end of six weeks she recovered her strength in a sufficient degree to admit of her being up and about the house. The exophthalmus and goitre were still very noticeable, and she was much emaciated. At this time, digestive disturbances be-

came prominent, and for the space of one month she vomited a large portion of her food. When this symptom was under control, there still remained constipation, alternating with diarrhœa. From this time until she came under my care, her condition remained practically unchanged.

When I saw her, there was violent palpitation of the heart, pulse 120. The arterial excitement was not confined to the vessels in the neck, there was also increased action of the abdominal aorta. The prominence of the eyeballs was well marked, though the lids could be closed without difficulty. The eyes were suffused and red. I cannot better describe the condition of the thyroid gland than by quoting from Holmes' "Surgery": "It was soft, smooth and elastic, and of equal character throughout, presenting the form of hypertrophied gland, and had rapidly developed itself to its present size—that of three or four times the magnitude of the gland in health; but it was subject to remarkable variations in this respect, according to the state of mind, rest or palpitation. It appeared to be highly vascular, and conveyed to the touch the sensation of an erectile tumor. There was also a purring thrill to be felt by the fingers, and a loud and sometimes musical bruit to be heard through the stethoscope." The lower extremities were œdematous. There was at times, profuse sweating. Examination showed the uterus to be about two-thirds the usual adult size. The posterior lip of the cervix was elongated, and soft and flabby to the touch. There was slight erosion of the cervical mucous membrane. No discoverable ovarian difficulty.

The general treatment consisted of tonics and sedatives, such as pyrophosphate of iron, digitalis, and bromide of zinc. Good results were obtained from the use of ergot. The galvanic current was applied daily, as suggested by Hammond. The gynecological treatment was directed to the relief of the uterine disorder, independently of the associated phenomena improvement followed rapidly.

At the end of two months the exophthalmus and goitre were much less noticeable; the palpitation of rare occurrence, the symptoms which usually precede menstruation made their appearance, and with the exception of slight dyspnœa on exertion, the patient said that she felt perfectly well, and discontinued further medical treatment.

212 Brady St., October, 1886.

PERINEORRHAPHY AS PERFORMED BY DR. W. GILL WYLIE.

Abstract of a paper read before the Obstetrical Society of Philadelphia, March 3, 1887.

BY HOWARD A. PARDEE, M.D.,
OF PHILADELPHIA.

The interest shown in the paper describing Dr. Emmett's operation for the restoration of the perineum, read at the February meeting, leads me to think that a brief description of the operation devised by Dr. Wylie might also be acceptable to the Society.

According to a paper by Dr. Wylie, contributed to the *N. Y. Medical Record*, March, 1885, he had devised the operation about five years previously. It was first performed before a class, so far as I know, in a ward in Bellevue Hospital, in the winter of 1882–83. It is the operation as I then became acquainted with it that I shall describe, for it is the one I have since used and am most familiar with. A letter, received from Dr. Wylie a few days ago, tells me that he still uses the same operation with little if any modification. It is performed as follows:

The usual preparation by laxatives, hot douches and glycerine tampons having been carried out, the bowels are cleansed by enema an hour or two before the time for operation. Just before the patient is etherized, a hot vaginal douche of corrosive sublimate, 1 to 5000, or carbolic acid, 1 to 40, is given. Patient is placed on her back, the buttocks as near edge of table as possible, with the thighs strongly flexed and knees held apart by an assistant on either side. The labia are drawn apart as fully as possible without straining, and are held by the assistants. The caruncles marking the posterior border of the vaginal orifice are found and mark the limit of the denudation upwards or towards the pubes. A tenaculum is hooked into the crest of the rectocele, which is drawn down and an examination is made with the finger to find at what point the tissues on either side of it are put on the stretch by the traction. This point or one a very little above it is made the limit of denudation backwards into the vagina. It is well to mark it by snipping of a particle of the mucous membrane on either side. For the denudation a pair of moderately sharp pointed scissors, curved on the flat is the most convenient instrument. Following Dr. Wylie's example, I have always used a pair of good dissecting forceps to catch the tissues, instead of the tenaculum.

Commencing from below, a strip of mucous membrane as wide as can be conveniently cut is snipped off, following the line of junction of the skin and mucous membrane from the level of the inferior caruncle on one side to the same level on the other. We then denude all the posterior surface of the vagina up to this level till we reach the beginning of the sulci running on either side of the rectocele. The part of the operation requiring the greatest judgment has now come. Our object is to unite the vaginal walls above the sulcus on one side with the corresponding portion of the vaginal wall on the other side, so obliterating the sulci and forcing back the rectocele. If we carry denudation too high we shall find it difficult to bring the two sides together without undue tension. If we are too timid our support will be insufficient and the operation will be but a partial success. The proper level having been determined, we continue the denudation upwards till we reach the points in the vagina which we marked out as the limits of tension from the apex of the rectocele. This will usually be about one and a half or two inches from the orifice. In denuding this portion of the vagina we still work from side to side carrying the strip of mucous membrane down into the sulcus, up over the rectocele, down into the other sulcus and up to the level we have marked on

the other side. In doing this we should not cut very deeply, and preserve as much as possible of the muscular substance of the wall of the vagina over the rectocele, but afterward we should go over our work in the sulci removing all tissue till we come to the fibrous external sheath of the vagina. In this way we hope to preserve a firm muscular coat over the rectocele. When we are through, the denuded surface will be nearly square, or if the rectocele be very large a paralelogram, the greatest length being transverse to the axis of the vagina. All bleeding should be controlled perfectly by pressure and torsion, but if necessary catgut ligatures may be used and the parts washed thoroughly with some efficient antiseptic.

The suture should now be introduced. The first three or four are placed as in the old "butterfly" operation, entering about a quarter of an inch outside the line of junction of the skin and mucous membrane, passing backward and downward and then upward and forward emerging on the other side at a point corresponding to the point at which they entered. The last one of these external sutures should be entered a little above the level of the caruncle which marked the limit of denudation upward. The remaining sutures, four or five in number, are usually entered in the mucous membrane a little above the line of denudation, passed down below the angle formed by the sulcus and up to the crest of the rectocele. It is best to bring the needle through at this point and reintroduce it at the same point, it then goes down the other side of the rectocele, round the angle of the sulcus and up the opposite vaginal wall till it emerges above the line of denudation opposite the point where it entered on the other side. This may seem to be a difficult stitch, but with a straight needle, a good needle holder, and the index finger of the left hand in the rectum while the thumb is in the vagina, it is made without much trouble. The greatest care should be taken that the needle is buried when it passes under the angle of the sulcus.

When the sutures are placed and before they are tightened, the sphincter ani should be thoroughly stretched. This, to a certain extent, relieves the tension on the sutures, and at least adds largely to the comfort of the patient by preventing straining at stool. Another thorough cleansing of the parts should be done, and the sutures should be tightened from below upward. The urine is not drawn unless the patient is unable to pass it. The parts are washed after urination.

MEDICAL PROGRESS.

Condurango in Cancer of the Stomach.—Fifteen years ago there was introduced from Brazil a remedy which was claimed to be a specific for cancer. Since then, as before, other remedies have been similarly vaunted, and none have stood the test of experience. The remedy in question was condurango bark, of which a trial was made at the Middlesex Hospital, the negative results being read before the Clinical Society by Messrs. Hulke and De Morgan (Clin. Soc. Trans., vol. 5). In Germany almost the only favorable report came from Professor Friedreich, who related instances of its value in gastric cancer. Since then it has fallen much into disrepute, having been regarded as little better than a stomachic, and prescribed thus with advantage (Wilhelm: Year-Book of Treatment, 1886, p. 49) in cases of carcinoma and ulcer. But Dr. Riess, of Berlin, has just published (*Berl. Klin. Wochensch.*, March 7), some striking testimony to the value of the drug in gastric carcinoma, more conclusive than any that has hitherto appeared. It is noteworthy that he doubts whether its qualities as a stomachic are better than those of other drugs of that class, and that he has not found it efficacious in cases of cancer where the stomach is not primarily involved. (Messrs. Hulke and De Morgan's reports did not deal with gastric cancer.) It was in cases presenting the symptoms of cancer of the stomach (many with a tumor) that the best effects were noticed. In 105 cases—*i. e.*, where gastric cancer was diagnosed—treated at the General Hospital from 1878 to 1886, condurango was prescribed, and in no case, even in those in the last stage, without some effect. The drug was often given every hour—the total amount per diem reaching 10 grammes of the decoction—and continued for long periods without ill effect. The appetite improved in a few days, vomiting and pain diminished, and eventually ceased, and the patient gained in weight. Whether life is actually prolonged is, of course, difficult to prove; but Riess quotes statistics which show that the cases treated with condurango, both the fatal ones and those discharged in improved health, remained much longer in hospital than those not treated by the drug. He even states that of sixty four cases in which a palpable tumor was present, in seventeen it diminished in size, and in eight quite disappeared; and he details three cases of such disappearance of obvious tumor, which, subsequently dying, presented only cicatricial structure, with no trace of malignant disease. Obviously, before we can accept such cases as examples of the *cure* of cancer we must be certain that the original diagnosis was correct, and the same skepticism may be allowed respecting the whole series of cases. For cancer of the stomach may not only be latent, but may be simulated by non malignant ulceration, as every physician knows. Dr. Riess fairly discusses this point, being quite alive to the objection. He claims, at least, that condurango has some local effect upon a diseased stomach, and considers that in all suspected cases it should be prescribed. It need hardly be pointed out that a local action as here claimed is a very different thing from a specific action in cancer generally, which was sufficiently disproved by the observations at the Middlesex Hospital.—*Lancet*, March 12, 1887.

The Cure of Large Ulcers of the Leg by the Carbolized Spray.—Gilles de la Tourette, of Paris, presents in detail three cases of stubborn ulcers of the leg in inmates of the *Infirmerie des In-*

curables connected with the service of Charcot. The general condition of the patients was of the worst description. The first was an extremely debilitated and emaciated subject of asthma conjoined with chronic bronchitis, 69 years old, presenting an enormous ulcer covering the whole right leg, from the malleoli to within an inch of the tuberosity of the tibia. The carbolic spray for an hour and a half morning and evening, with intermediate dressing with borated vaseline, caused a complete cure in less than a month. The second was an ulcer, eighteen centimeters high, covering the lower half of the leg in a patient 82 years of age, feeble and senile, and the subject of chronic bronchitis. Carbolized spray for two hours twice a day with borated vaseline dressing in the intervals, secured a complete cure in about six weeks. The third case occurred in a syphilitic subject, with mitral insufficiency, tertiary syphilis and chronic bronchitis, aged 59, with a vast ulcer, twenty-two centimeters long, enveloping the whole leg. Carbolic spray applied during the next six months had brought the ulcer down to about the size of a six sous piece when the patient died by his own hand. As the result of his observations, the author concludes: *a*. The method of carbolic spray repeated daily for an hour and a half, morning and evening, beter than any other method leads to a rapid cure of large varicose ulcers. *b*. In the early part of the treatment, the pains seated in the ulcer disappear. In the three cases observed, no erythema ever appeared at the margin of the wound, nor did the patient ever void the black urine indicating carbolic poisoning. *c*. A state of debility or senility of the patient does not in any way contra-indicate the employment of the method, which, on the contrary, by the local stimulation, which it determines, seems formally indicated in this particular case. *d*. The solutions used are the stronger, as the ulcer is the more atonic; solutions less than 1 to 50 should be rejected and even the greater strength, $\frac{1}{30}$, $\frac{1}{20}$, or even $\frac{1}{10}$ could be used. In the interval between the applications of the spray, the dressing of borate of soda and vaseline, 1 to 10 will be found useful.—*Revue de Chirurgie*, July, 1886.—*Annals of Surgery*, March, 1887.

Scopoline.—Mr. H. Percy Dunn says: This new mydriatic, introduced by Pierd'houy, is, as far as my experience of it goes, a useful drug. Since the beginning of the current year I have employed it almost continuously amongst my out-patients at the West London hospital, not for the purpose of testing its qualities as a mydriatic, but as a drug to supersede atropine in the treatment of keratitis, corneal ulcers, and iritis. I have found that in the case of troublesome corneal ulcers which had been treated respectively with both atropine and eserine without success, rapid improvement followed the installation of scopoline. And especially was this good effect shown in cases of severe interstitial keratitis, in which atropine had been previously employed. Again, in rheumatic iritis the use of scopoline was obviously effective in reducing the pain and injection of the globe. Upon no occasion have I seen any conjunctival or other irritation set up by its use, and I have found one grain to the ounce a sufficiently strong solution for my purposes.

I am disposed to believe that, in addition to its mydriatic power, scopoline is able to effect some control upon the vascular supply of the eye; the drug may be, indeed, the physiological antithesis of eserine; at present, I am engaged upon an inquiry with Dr. P. S. Abraham, into the physiology and chemistry of the drug, and we hope before long to publish the results.—*British Medical Journal*, Jan. 8, 1887.

Peroxide of Hydrogen in Whooping-Cough.—Dr. Benjamin Ward Richardson, states that he has treated nine cases of whooping cough with peroxide of hydrogen exclusively, in six males and three females, all children. The solution was given in doses of a fluid-drachm five or six times a day. The remedy in this affection has a decided value. Commencing with it in the acute stages of the disease, and trusting to it alone, he has never seen pertussis cut short so quickly and determinately by any mode of treatment except change of air. He had previously used dilute nitric acid in whooping-cough, as advised by the late Dr. Gibb, and with satisfactory results. The peroxide appears to him to act in a manner very similar, but, he thinks, with more effect. It subdues the spasmodic paroxysm, checks the secretion in the throat, and shortens the period of the malady, lessening, thereby, the dangers of after-effects. The mode of prescribing it is:

Hydrogen peroxide (10 vols. strength)....	ʒvj.	
Glycerine pure.....	ʒiv.	
Water distilled to.....	ʒiij.	ɱ.

To make a solution of three fluid-ounces, of which let half a fluid-ounce be taken in a wineglassful of water as directed.

When there is a stridulous spasm with the cough he substitutes ozonic ether ʒij for the solution of the peroxide, or adds it to the mixture.—*The Asclepiad*, No. 13, 1887.

Antifebrin.—Eisenhart, in the clinic of Ziemssen in Munich, has used antifebrin, and reports as follows: The number of cases observed was 30. The doses given were from 4 to 8 gr., in powder and solution, by rectal and anal use. In a case of erysipelas a dose of 8 grains was vomited when given by the mouth; when given by injection it was retained. In general the drug was well borne; half the patients had profuse perspiration following, and an exanthem occurred in one case. Cases of typhoid, treated with antifebrin, had an easy course. The influence of the drug was generally manifested two hours after it had been taken. After a dose of .4 gr. the temperature sank six times from .1° to 1°, thirteen times from 1° to 2°, fifteen times from 2° to 3°, six times from 3° to 4°, and three times more than 4°. After a dose of 8 gr. a depression of temperature of .1° to 1° occurred three times; from 2° to 3° seven times; from 3° to 4° twice; from 3° to more than 4° twice.

In doses of 4 to 8 gr. antifebrin is a very valuable febrifuge, reasonably certain of success.—*Deutsche Medizinal Zeitung*, No. 51, 1886.

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BERGEON'S TREATMENT OF CONSUMPTION.

If experience justifies the claims of M. Bergeon for his method of dealing with this deadly foe to mankind, he will have illustrated the saying of Horace:

Exegi monumentum aere perennius.

There is another name which should be associated with his in honor: that of Claud Bernard, since his experiments thirty years ago laid the foundation for this present discovery.

It is not likely that in this or any other form of treatment will be found a cure for all cases of pulmonary phthisis. Yet such are the results already gained in numerous cases by the rectal administration of carbon dioxide charged with sulphuretted hydrogen as to expose the physician, who does not try it in any given case of consumption, to the charge of culpable negligence. Therefore although the majority of our readers are probably familiar with this novel treatment through descriptions published in this and other journals, we propose to state a few points for the sake of any one who may chance to desire enlightenment. Full descriptions of the apparatus and the method of its employment are to be found in the *British Medical Journal* of Dec. 18, 1886, and the *Medical News* of April 2, 1887, besides various French journals, and a pamphlet published by M. Morel, Bergeon's assistant.

The results claimed by the inaugurator of the method and his colaborers, by Cornil, Chantemesse, De La Roche, physicians in Geneva, Marseilles, Philadelphia, this city and elsewhere, all competent observers, are strikingly in accord; viz., a lowering of the temperature, lessening of the sweating, cough and expectoration, a feeling of well being, improvement of appetite and consequent gain in strength and weight. This improvement of symptoms is manifested, moreover, so soon, that Bergeon says the patients may be considered convalescent oftentimes in from fifteen to twenty days. Is it strange then that the laity and profession alike are being carried away by enthusiasm! What other line of treatment is there that will accomplish as much and in so short a time, if at all! Moreover, Bergeon, Cornil and others cite cases in which all symptoms of disease have disappeared and only signs remain indicative of once active, but now quiescent pulmonic lesions. Furthermore, M. Chantemesse has reported this treatment as strikingly efficient in allaying paroxysms of asthma. It is said to mitigate the severity of whooping cough, as well as to abbreviate the duration of the disease. Chronic bronchitis is also favorably influenced; while septicæmia and other blood diseases dependent upon the presence of germs, are likewise amenable to this method of therapeutics. Enemata of carbonic acid gas charged with hydrogen sulphide are said to be tolerated without ill effects to the patient, if properly given.

Such, in brief, are the glowing accounts of M. Bergeon's method, which is exciting such lively hopes. Such are the effects in which optimists see the long sought cure for consumption. We frankly own they are flattering, and repeat our assertion above, that they are such as to render every practitioner guilty of negligence toward his patients if he does not try the method in suitable cases.

Is there, however, no other side of the picture? Are there no considerations which render the treatment inadmissible in certain cases? Assuredly; and the conservative element in the profession is beginning to direct attention to these. It is not denied that almost miraculous amelioration of symptoms has followed the treatment in numerous instances. Nevertheless, since bacilli are still found in the scanty expectoration of patients in whom disease appears to have been arrested, it is claimed quite justly that a cure cannot be said to exist. Again, cases are on record in which the treatment was not well borne. Indeed, M. Wiss, of Geneva, cites three cases in which it was not at all well tolerated, the patients dying inside of two months from the beginning of the treatment. One of them was a man aged 40, in whom it produced such severe colic and diarrhœa that it had to be abandoned at the end of a month. In this instance Bergeon himself superintended the treatments. Dr. Osler, of Philadelphia, in some comments upon this method before the Philadelphia County Medical Society, mentions one case in the

Philadelphia Hospital who nearly expired after the first administration of the gas charged with a mixture of carbon bisulphide and sulphuretted hydrogen. M. De La Roche, of Lyons, has also reported a case in which the treatment produced intense colicky pains, but in this there were hæmorrhoids and fissure of the anus. These are sufficient to render caution necessary. De La Roche furthermore thinks the treatment inadmissible when both lungs are extensively destroyed. The reason is clear; the lungs would be able to eliminate the gas but slowly, and unless the injections were made very gradually, a degree of distension of the bowel would be produced which might seriously, perhaps fatally embarrass the limited respiratory capacity remaining to the patient. Finally, in cases of intestinal ulceration, a rash degree of distension might cause rupture of the weakened bowel.

Such are the considerations which dispel the glamour thrown about this new method by optimistic supporters, and make its indiscriminate application by advertising charlatans dangerous. This view of the case also should be set before the press of the country lest enthusiastic, unscientific and exaggerated reports of the success of the method arouse hopes never to be realized, if indeed nothing more serious should result. It is too soon for this treatment to be characterized as a cure for consumption, as it is being heralded by the quacks and the press. It must first be tested critically and established upon a scientific basis. To this end M. Cornil has instituted a series of careful experiments upon tuberculanized animals, to ascertain if this treatment possesses microbicidal virtues, or whether its effects are due solely to the power of disinfecting the products of suppuration within the lungs. The profession awaits with interest the results of these experiments. It is to be hoped that Bergeon's method may not share the fate of so many other vaunted weapons against this dire disease. Meanwhile a word of caution to the wise is sufficient.

ESBACH ON DIABETES.

Dr. Esbach, Chef of the Laboratory of Clinical Medicine at the Necker Hospital, has lately written an interesting Thèse on diabetes or glycosuria, which he describes to be a disorder of the assimilating functions, by virtue of which certain aliments which ought to be destroyed in the organism to be transformed into force and heat, pass through it without being utilized and are eliminated by the urine in the form of sugar. The author reserves the name of glycosuria (symptomatic diabetes) for cases in which the diabetes has not a special existence. Essential diabetes is, on the contrary, glycosuria which cannot be connected with a lesion, or with an anterior or existing malady.

Dr. Esbach describes diabetes as being composed of four principal elements in the static period, or, in other words, in a paroxysm of diabetes mellitus: 1. A nervous disorder, of divers origin, most frequently from some mental cause, which deranges the assimilating function of the liver. 2. Glycosuria, the richness of which varies according to the degree of the malady, in proportion to the bread and to the sugar and starchy substances ingested. 3. Exaggeration in defective assimilation, or increasing fatigue of the assimilating function, in proportion to the exaggerated consumption of sugar and starch, and to the overtaxing of the function of the intestines. 4. "Physiological misery" (anæmia), the result of improper alimentation, and tending to exaggerate the assimilating powerlessness of the diabetic neurosis. The author draws the distinction between fat and lean diabetics, and gives as important rational signs of diabetes, polyphagia, polydipsia, and polyuria. Isolated polyuria (diabetes insipidus) is not rare in women.

Esbach has made persevering researches on the chemistry of glucose, and recognizes only two certain means of discovering its presence in the urine: Fehling's liquid and the polarimeter. The measure of the density is not always significative; however, it is rare that beyond 1030 there is not glucose. As to treatment, he recommends diabetics to drink largely according to their thirst, in order to diminish glycæmia as much as possible, water being the accelerator of all the secretions, of all the nutritive processes—the medicament *par excellence*. The treatment by drugs, he says, is almost *nil*. With the exception of the alkalies the general treatment is founded almost exclusively on alimentary hygiene. Two methods are vaunted as being capable of combating the glycosuria: The first is by the complete suppression of all farinaceous and saccharine substances until the entire disappearance of glucose in the urine takes place, the exclusive use of gluten bread being at the same time prescribed. After six months' absence of the glycosuria, the treatment consists in the method of strict surveillance. In the latter case, the patient may be allowed a small quantity of ordinary bread, as long as the glucose does not augment or reappear in the urine. This method is specially applicable to old and confirmed diabetics. In his *menu*, the author allows his diabetics the use of coffee without sugar, or it may be sweetened with glycerine, without, however, attaching to the latter any curative action on the

diabetes. It is rather disagreeable to the taste, but it does not produce sugar in the urine. Finally, a good deal of muscular exercise should be insisted upon, particularly walking. The mind should be kept perfectly quiet, and the patient should avoid politics and the reading of medical works.

THE DUTIES OF SECRETARIES OF SECTIONS.

In view of the approach of the annual meeting of the American Medical Association, we would again call attention to some defects in the practical working of the Sections of the Association, and chiefly to the fact that the discussions on papers are not fully reported. The discussions as sent with papers to this office are usually entirely valueless, and in not a single case for two years have they been at all full. It is of no interest to a reader to know that a certain paper "was discussed by Drs. Brown, Jones, Smith, Johnson and several others." We gain no valuable information by reading that "Dr. —— asked a question about the dose of croton oil, and Dr. —— answered it." It is of no value to know that "Dr. ——'s paper was ably discussed by several gentlemen." We must presuppose that all papers read before the Association are discussed by gentlemen when discussed at all, but it is for the readers of the discussions to say whether the discussions were able or not. Our curiosity is excited by reading in a Secretary's report that "The discussion was closed by Dr. ——," but our stock of information is not increased.

Those who take part in the discussions can lighten the labors of the Secretaries, and have their remarks appear in a much more readable and valuable shape by writing out their remarks, wholly or in part, as far as possible, before going to the meeting of the Association. This can be made more practicable by having the author of a paper indicate to the Secretary of his Section those who would be likely to take part in the discussion, and have the essential points sent to them before the meeting. It is done in other scientific bodies. And should any matter come up which has not been embodied in the written discussion, it can be easily added to what has been written. And should no new point come up the discussion is ready to be handed over to the Secretary. To say the least, those who discuss papers should do all that they can to assist the Secretaries in making out a useful report of the Sectional meetings. If a paper is worth discussion it is worth while for those who discuss it to make a little self-sacrifice in having their remarks appear in proper form, and accurately. In some cases last year we had to write to different parts of the country to find out what certain men had said in the discussions.

The position of Secretary of a Section is a purely honorary one, but he who accepts it should feel it a duty to do his work properly and carefully. It is regarded as an honor to be elected to such a position, but it should not be regarded as an honor which entails no duty or work on the recipient. No one should accept the position who is unwilling to do the work devolving upon him. It is entirely useless for a Secretary to report in full the business transactions of his Section to the Editor of THE JOURNAL. This properly belongs to the business of the Association, and as such should be sent to the Permanent Secretary to be incorporated in his report. THE JOURNAL does not publish separate reports of the Sectional meetings of the Association, and when they come to this office they are only so much waste paper. What is wanted of the Secretaries of Sections is an accurate and full report of the *discussions on papers* read in the Sections, giving simply the name of the author and the title of his paper, and the *date on which* a paper is read, so that it may be published in its proper order. Abstracts of papers read in the Sections are of no value whatever, as the papers are published in full in THE JOURNAL. It will be noticed that in THE JOURNAL the discussions, such as are sent, are placed immediately after the papers. The reason for this is obvious: the papers are published at different times, not in a lump, and it would be annoying to have to refer back possibly eight or ten numbers to read the discussion on a certain paper. In reporting discussions, and giving names of authors of papers and of those who take part in discussions the Secretaries will prevent much confusion by giving the full, or usually known names, postoffice, and State of each person.

We know that absolute attention to all details may deprive some of much of the social enjoyment of the meetings, but neglect of these details and duties may subsequently deprive the members and readers of THE JOURNAL of much valuable material.

MEDICAL GRADUATES FROM CHICAGO COLLEGES.—The number of students receiving the degree of Doctor of Medicine at the several recent annual Commencement exercises in the regular colleges was, Rush Medical College, 134; College of Physicians and Surgeons, 53; Chicago Medical College, Medical Department of Northwestern University, 44; Woman's Hospital Medical College, 25. Making the total 256, representing about 750 matriculants.

Illinois State Medical Society.—In another column will be found the usual notice for the annual meeting of the Illinois State Medical Society, to be held on the 17th, 18th and 19th of May, in this city. It is very desirable that the profession in every part of the State should be represented in the coming meeting. The recent death of Dr. Wm. T. Kirk, of Atlanta, devolves the duties of President upon the first Vice-President, Dr. Elias Wenger, of Gilman. Members of the Society will meet a cordial reception from the profession in this city.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, February 23, 1887.

The President, Jos. Taber Johnson, M.D., in the Chair.

(*Concluded from page 413.*)

Dr. J. Ford Thompson gave the history of a case of

LAPAROTOMY FOR INTESTINAL RUPTURE.

Called in June, 1885, by Dr. Henderson, to see A. B., a young man of 18, who was suffering with symptoms of obstruction of the bowels. He found a large, hard tumor in the right iliac region, which was very tender on pressure.

The patient had been treated with purgatives and enemata, but without relief. The long rectal tube and copious injections, however, relieved him.

Was called again in April, 1886, to see the same boy whom he found much more ill than at his first visit. There was vomiting, and a tumor in the right iliac region was rapidly increasing in size. The same means as before failed to give relief.

On May 4, he explored the tumor with a needle and found pus and fæces. It being impossible, owing to other important engagements, to operate that day, the next morning (May 5,) he made a long incision over the tumor and evacuated an immense amount of fæces. He seized a fistula in the colon just below the ileo-cæcal valve and drew it into the wound. As far as he could see the abdominal cavity was filled with fæces. The cavity was washed out with hot water, but the fæces seemed still to be escaping into it.

On the anterior aspect of the colon he found an opening about 1.25 inches in diameter. The condition of the tissues around the opening would not permit him to close it in the usual way, so he stitched it at each end to the incision, thus making an artificial anus. A drainage tube was inserted beside it, into the abdominal cavity to allow of the escape of water and fæces.

The patient rapidly improved and in a few days all the fæces were being discharged through the artificial opening.

The wound in the parietes closed so rapidly that it had to be occasionally dilated to admit of the exit of the fæces.

The gut, however, did not unite, and the epiron could be seen between the two openings in the intestine.

About two months after this, having slightly enlarged the parietal wound, he carefully applied Gross' enterotome to the epiron. In six days the instrument came away but the fistula still remained patent.

The patient was now in a good state of health, but was very much troubled by the continuous discharge of fæces through the artificial anus. In fact, his life was made unbearable, and both he and his parents were very desirous that some curative operation should be done.

Dr. Thompson having fully explained the uncertainties and dangers, as well as the possibilities, of a radical operation, readily obtained consent to the trial.

On December 11, therefore, assisted by Drs. Henderson, G. W. Johnston, Spigg, Leach and Cutts, he once more opened the cicatrix of the old incision. Having broken down the adhesions of the gut to the parietes he had no difficulty in finding the opening into the intestine. This was of considerable extent, and to his surprise in the "small" intestine, while it had been the "colon" which he had previously stitched to the wall. He, however, pared the ragged edges of the fistula and joined them by the Czerney-Lembert method with three layers of fine silk sutures. This fistula was about six inches above the ileo-cæcal valve.

He was just about to close the wound in the abdomen, when he discovered a second and larger fistula in the "colon" about opposite the ileo-cæcal valve. Had he known in advance of the existence of "two" fistulæ, he would probably have resected the gut between and joined the two ends together.

As it was, having closed the first opening, and judging from the appearance of the intestine between the openings that it was healthy, he closed the second fistula as he had the first.

The abdominal wound was closed, and on the fourth day an enema brought away fæces *per rectum*. On the eighth day, however, fæces appeared at the artificial anus, and they have been discharging from there ever since, although there is an occasional movement from the regular passage. This proves that his estimation of the condition of the ileo-cæcal valve was correct.

Dr. Thompson went on to say, that his diagnosis of the cause of this inflammation and sloughing of the caput coli, had been perityphlitis, but that now he was not certain whether perityphlitis or typhlitis had come first. It makes, however, very little difference, as one almost always leads to the other.

Laparotomy, in these cases, is nearly always a late operation, for it is very difficult to tell the proper moment for its performance. If we wait until fluctuation appears in the region above the inflammation, suppuration has done all the harm it can. He is in

favor of treating it as any other abscess, by cutting down upon the gut at the first signs of suppuration without waiting for fluctuation. If only pus be found this incision is sufficient, but if there are fæces in the cavity they must be washed out and the wound in the intestine closed, provided it is a recent one. If the edges of the fistula are congested and there is much inflammation, the only thing to do is to make an artificial anus, with the intention of closing it when the patient has somewhat regained in health.

On the other hand, severe symptoms of perityphlitis or typhlitis suddenly disappear without operative interference.

He has recently been called three times to do colotomy for intestinal obstruction, but has each time succeeded in relieving the patients without it.

The question is, how did the wound in the ileum come there? It might he said that it was made when he put the enterotome on the epiron. This does not seem probable as he had taken the greatest precautions to prevent this very thing.

His explanation is that both openings were there at the first operation, but that only the fistula in the colon was discovered. The ileum being adherent to the colon, was drawn with it to the parietal incision and discharged itself upon the surface. Only the colon was, however, stitched to the wound. Either that was the way of it or it was made by the enterotome, for its existence for some time could not be doubted.

Dr. T. C. Smith asked Dr. T. from whence came the fæces which he says continued to well up even after he had seized the opening in the gut? Does this fact not confirm the idea that the break in the ileum was there at the first operation?

Dr. Thompson replied that he had been unable to tell whether he had the upper or lower opening of the colon in his hand, and that in all probability he had not absolutely excluded it, so as to prevent the escape of some fæcal matter.

He has been unable to find the report of a like case anywhere. The peculiarity of the case is that there were "two" fistulæ lying alongside of each other with the ileo cæcal valve between them, in the continuity of the gut.

Dr. A. F. A. King asked if what was taken at first for the colon might not have been distended ileum?

Dr. Thompson replied that he was certain that it was not.

Dr. S. C. Busey asked why, if the hole in the ileum was there at first, the contents had not continued discharging through it into the abdominal cavity?

Dr. Thompson replied that the ileum was adherent to the colon and was attached with it to the incision in the parietes, and that the fæces escaped the easiest way.

Dr. Busey said that this point was still not quite clear to him. Dr. Thompson says that the two openings were there from the first. Now, if the colon was stitched around the edges of the parietal wound, what prevented the fæces from discharging into the peritoneal cavity through the fistula in the ileum? So far as the peritoneal cavity was concerned it was shut off from the external air by the stitching of the colon to the knife wound, but he failed to see why fæces did not get into this cavity.

Dr. Thompson explained that the colon was not stitched to the abdominal incision all the way round, but only at the top and bottom, and that a drainage tube had been inserted to one side. There was, therefore, plenty of room at the side for the discharge of a fistula of the ileum.

If his theory, that the two adhered by the first inflammation, is correct, it is plain that a slough in the ileum would open into the colon, and that, having been stitched to the belly walls, the fæces from the ileum would discharge through it upon the surface.

ST. LOUIS MEDICAL SOCIETY.

Stated Meeting, March 19, 1887.

The President, S. Pollak, M.D., in the Chair.

Dr. F. S. Mooney exhibited

A STONE REMOVED FROM A FEMALE BLADDER.

It was a soft stone, weighing 405 grains. He removed it by cutting through the vagina into the bladder, and left the opening unclosed in order to get drainage. There was a great amount of cystitis which has been quite severe for four or five months. It was removed on Wednesday morning, when the patients temperature was 101° F., and since that time it has come down to a little above normal.

In reply to Dr. F. J. Lutz, why he did not stretch the sphincter, Dr. Mooney said he dilated the urethra sufficiently to introduce the finger into the bladder, and there was such a quantity of tough mucus there, and so much cystitis, that he thought it advisable to make a cut simply for drainage, if for nothing else. He believes it is a good plan to make an opening in case of cystitis, and without it it certainly would have been a good task to wash out all of this stone. He crushed it with a small uterine polypus forceps. It would not have been possible to remove the stone through the urethra without crushing it.

Dr. Lutz said it was surprising to what extent the female urethra can be dilated. It is a common thing to put the finger into the female bladder by simply introducing the dressing forceps and spreading the blades, and introducing the finger. He believes we should always avoid an incision in surgery if by any other procedure we can accomplish the object, and the stone, in his judgment, ought to be of exceedingly large size before the bladder is cut. There are other conditions engendered by the presence of the stone, or in some instance giving rise to the formation of calculus which might demand incision, such as cystitis, as in Dr. Mooney's case. Cutting the bladder gives a surface favorable for the absorption of noxious material, and thereby increasing the risks of the operation. Afterwards there is vesico-vaginal fistula to deal with.

Dr. L. K. Laidley said, that the question of the

mode of dealing with these cases was very correctly discussed by Dr. Emmet. He bases his reasoning for the use of the knife on the reports of Dr. Bozeman in his tables that in a large number of the cases which were dilated, dilatation destroyed the power of the neck of the bladder, and thereby inflicted injury on the patient. The number of cases that Dr. Bozeman reported convinces him that there is much less danger in cutting in than in dilating, and he thought Dr. Mooney was warranted in cutting in this case.

Dr. R. Funkhouser thought one point a very important one, which has only been casually mentioned—the cystitis. From his observation in connection with the treatment of cystitis in the male, and from the operation of button-holing the bladder, he would think the most proper operation in the present case would be cutting through into the bladder by the vagina. Dr. Mooney said that the patient suffered intensly from cystitis. There would be a greater surface for the absorption of morbid material if the attempt had been made to stretch the urethra instead of cutting. He finds that in dealing with the urethra, even for ordinary trouble, as in irritable urethra, there are not only one, but sometimes three or four fissures made by the dilatation.

Dr. Mooney said that this patient, before she was operated on, was taking 2½ grains of morphine daily to control the severe pains she had. Since the operation she has had one dose of morphine, of ¼ grain, and no more. The incision has not closed; it was only made three days ago. He does not think we necessarily have a vesico-vaginal fistula in these cases. Thomas and Emmet say it is very hard sometimes to keep the opening patent. He explained to the patient that she would probably have to have another operation performed.

Dr. H. C. Dalton gave the history of a case of

STRANGULATION OF THE BOWEL.

The case was brought to the City Hospital three days since with symptoms of acute intestinal obstruction. He was a delicate looking man, about 34 years of age. He stated that some ten years ago he had dysentery; also again about three years ago, shortly afterwards he had an attack very similar to the one for which he entered the hospital. Three days prior to admittance he was taken very suddenly ill with intense pain in left iliac region, which soon extended over the entire lower portion of the abdomen. It was intermittent in character. His bowels had not moved since the attack, nor had any flatus passed. He had vomited persistently, ejecta being stercoraceous. The least pressure over the abdomen gave intense pain. His condition bordered on collapse. I ordered morphia, stimulants, hot bottles, etc., and concluded to wait for some reaction before operation. The vomiting did not again occur, and reaction was established by the following morning. When Dr. Lutz saw him, his condition appeared so good that we thought it advisable to delay the operation. Dr. Lutz performed laparotomy at 4 P.M. The patient did not rally, and died two hours afterwards. Dr. Lutz will describe the operation.

Dr. Lutz said, the man's history was a peculiar one, he had twice before been supposed to have suffered from intussusception. As is usual, the attack came on suddenly. Meteorism was not extensive. The tenderness was limited to the region below a line drawn across the abdomen at the umbilicus. Diagnosis approximately made was strangulation by a band, based on the previous history of peritonitis. In opening the abdominal cavity and introducing his hand, the first thing he struck was a band firmly binding down the gut, beginning in front and passing over the bowel, downward toward the pelvis, where it is united with a number of adhesions which bound together several of the coils of the intestines. This adhesion, he thought, was the one which caused the strangulation, because it seemed that from that part upward the black strangulated portion began and extended six inches. The other portions of the bowel, which were matted together, were not in that apparently lifeless condition. The question came up, whether or not the bowel which appeared black and lifeless was possessed of sufficient vitality to warrant its retention in the abdomen. It was replaced without performing excision. We know that in many cases of strangulation the bowel is returned because the blood supply is extensive and the gut soon regains its vitality. In removing the band which held a portion of the intestine down, the peritoneum was removed from the portion of the gut over which it passed. This is an important question in excision of a portion of the stomach or intestine. Whether or not the vitality of the bowel suffers to any extent after removal of the peritoneum, he was not prepared to say, but he would judge from observation and reasoning that the limited portion removed from the bowel would not seriously interfere with the nutrition, and is not productive of a sufficient amount of peritonitis to jeopardize the result of the procedure. The fact that the bowel was made impervious by this band had demonstration by the escape of the intestinal contents after the removal of the compressing force. There is no question in his mind that the procedure was justifiable, nor was the diagnosis of intussusception warrantable from the symptoms.

Dr. I. N. Love thought the developments following the operation fully justified Dr. Lutz in performing it. The important lesion that we learn from this case is that we should direct our attention to the local condition.

GYNÆCOLOGICAL SOCIETY OF BOSTON.

Annual Meeting, January 13, 1887.

The President, H. O. Marcy, M.D., in the Chair.

H. J. Harriman, M.D., Secretary.

The following were elected

OFFICERS FOR THE ENSUING YEAR.

President, H. M. Field, M.D.
Vice-President, Horace C. White, M.D.
Secretary, H. J. Harriman, M.D.

Treasurer, W. Symington Brown, M.D.

Committee on Membership: Drs. A. L. Norris, C. W. Stevens, E. C. Keller.

Committee on Pathology: Drs. E. W. Cushing, A. P. Weeks and H. O. Marcy.

The President, Dr. H. O. Marcy, read his Annual Address, entitled "*Recent Advances in Abdominal Surgery.*"

Dr. E. W. Cushing reported a case of

MELANCHOLIA; MASTURBATION; CURED BY REMOVAL OF BOTH OVARIES,

and presented the ovaries. The history of the case was as follows: French Canadian, 33 years old. Since the age of 15 has suffered from dysmenorrhœa and intense pain in both ovaries; has been a confirmed masturbator. Had lately lost flesh rapidly, and had sunk into a state of profound melancholia on account of the belief that she had committed the unpardonable sin, and was eternally damned. Was unable to attend to any occupation, and begged that some operation might be performed in hope of relief. She was seen by Dr. H. I. Bowditch and Dr. H. O. Marcy, who advised removal of the ovaries. The ovaries were removed by Dr. Cushing in the presence of Drs. H. I. Bowditch, S. N. Nelson and Geo. W. Galvin. The Fallopian tubes were somewhat enlarged; ovaries slightly enlarged, and one contained a small cyst.

The question of how much effect the operation will have in these cases is important. Clitoridectomy is inefficient, but removal of the ovaries has in some cases been done with advantage. Dr. Cushing asked the sentiment of the Society in regard to the advisability of removing the ovaries in such a case. In reply to Dr. A. D. Norris, as to the condition of the clitoris, Dr. Cushing said that it was somewhat enlarged and congested, but not markedly changed. He had examined the patient but once, and then his manipulations induced a strong orgasm.

Dr. A. P. Clarke saw the patient prior to operation and found her in a deplorable condition.

At the meeting of the Society held on February 10, exactly four weeks after the operation by Dr. Cushing, the discussion of the case was resumed.

Dr. Cushing made a short supplementary report in regard to the case. The patient recovered from the operation without a bad symptom, and now complains only of some tenderness about the pelvis. Since the operation she has been entirely free from melancholia and sexual passion. She describes her improved mental condition by saying "a window has been opened in heaven." Some scoff at the idea that insanity can be favorably influenced, in any case, by removal of the ovaries, but the operation has been done repeatedly, and with a degree of success sufficient to prove that ovarian trouble can cause mental derangement. The operation is not a severe one, and is not as dangerous as a major amputation.

Dr. H. I. Bowditch, a guest of the Society, was asked to discuss this case. He said that he had come to the meeting for the sole purpose of saying something in regard to Dr. Cushing's case. Of all the triumphs of surgery none equal this operation. He had seen the patient prior to operation and found her a poor, miserable, wretched being, on the verge of suicide. Since the operation the change in her condition was marvelous. She is now clothed and in her right mind; her whole manner is changed and she is quiet and pleasant. There is still slight tenderness about the pelvis, but no sexual passion. He had been so much interested in the case that he had visited the patient twice since the operation. He believed that the risks of death should be run in order to gain such a wonderful improvement, and that a physician who would not do this operation or would not permit it to be done would be wanting in humanity. He said that there are many cases in our insane asylums, similar to the one described, which might be cured by removal of the ovaries. In reply to Dr. Cushing as to whether, in his opinion, there was any hope of curing such cases by moral means. Dr. Bowditch said that there was absolutely no hope from moral means. In reply to Dr. L. F. Warner, he asked if Dr. Bowditch would advise the corresponding operation for a similar condition in a man. He said that he had never seen a case in a man resembling the one described by Dr. Cushing, but that if he met such a one he would recommend the corresponding operation.

Dr. Warner referred to a case exhibited to the Society years ago by Dr. H. R. Stover, which resembled in many respects the one under consideration. In that case the clitoris and all the tissues down to the pubic bone were removed and recovery followed. He was opposed to all such operations, and believed that the favorable results reported came from the powerful moral influence of the operation.

Dr. E. C. Keller saw Dr. Cushing's patient, both before the operation and afterwards. She believed her infinitely better off since the removal of her ovaries. The woman is not now more mutilated than before. As to the charge that such an operation unsexes the patient, Dr. Keller did not regard that a misfortune in such a case. Marriage is not for such a person, and children springing from such parentage are not wanted.

Dr. R. J. P. Goodwin raised the question as to the legal responsibility of the physician who performed this operation upon a person who was not mentally capable of giving consent. Have we a right to operate in such cases?

Dr. E. W. Cushing said that the same rule would apply in these cases as to one in which a person was found unconscious with a limb crushed. The consent of relations and friends should be gained, and the operation performed.

Dr. W. Symington Brown said that in cases like that of Dr. Cushing many things should be considered. Is the operation likely to result in a cure? This question can be answered with a fair degree of accuracy by determining whether the ovaries are actually diseased. If one or both ovaries are diseased, remove them; otherwise let them alone. Americans are given to overdoing things, and are likely to err in the same direction in surgery; one successful case may inspire similar operations in cases not suitable for operation, and thus bring a justifiable oper-

ation into disrepute. If the patient is incapable of earning a living, and is a nuisance to herself and friends, the operation should be performed. If doubt exists as to the state of the ovaries, an excision should be made. He believed that if nymphomania was a disease of any one organ, it was a disease of the brain and not of the ovaries. On this theory any shock may cause an improvement, whether it is purely moral or the effect of a radical operation. A case was cited of delirium tremens, followed by insanity. When the recovery from insanity took place the appetite for strong drink had entirely disappeared.

[Reports from Dr. Cushing's patient as late as March 10 show that she is still entirely free from mental derangement and excessive sexual passion.]

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, March 3, 1887.

The President, Thomas M. Drysdale, M.D., in the Chair.

Dr. D. Longaker read a paper on the

TREATMENT OF LABOR IN CONTRACTED PELVES.

The most frequent forms of contracted pelves are the flattened and the generally contracted. In the former the conjugate diameters alone are shortened, and in the latter all are less than normal. This paper is limited to the consideration of those cases where the narrowing is moderate and not sufficient to render the birth of a living child impossible; this embraces flat pelves having a conjugate of three inches or a little less, and generally contracted pelves having a conjugate of at least three and one-third inches. Dr. Longaker here followed with a description of the peculiarities of the flat non-rachitic pelvis and the flat rachitic pelvis.

Reports of six cases were given. In the *first*, with a conjugate of three and one-half inches, craniotomy was performed in consequence of the large size of the head and an unchangeable bad presentation of the head, after attempts to deliver with the forceps had failed. The mother ultimately recovered. A careful study of the change from a vertex to a brow presentation is given, and the increased dangers in multiparæ follows, with a criticism on powerful traction efforts first with one pair of forceps and then another until three or four have been tried. *Case* 2 was delivered with forceps of a living child. *Case* 3 was also delivered with forceps of a living child. *Case* 4. Rachitic flat pelvis, conjugate of three inches, second pregnancy; delivered by means of Tarnier's traction forceps. Her first child had been born without assistance after sixty hours of labor. A large portion of the posterior cervix had sloughed away as the result of this prolonged labor. The head was transverse and semi flexed at the superior strait. He applied the forceps over the face and occiput and delivered a living child. The mother did well. *Case* 5 was a counterpart of the fourth. Tarnier's forceps were used and mother and child did well. With version in contracted pelves he has had no experience. Under favorable circumstances the operation can be done so easily that it may be regarded as without danger in itself. *Case* 6 was a breech presentation in a contracted pelvis, third pregnancy. The first child had been still-born, the second was delivered alive by means of the forceps. In this, the third labor, the extraction of the after-coming head was very difficult and the child was still. The day after delivery signs of internal hæmorrhage and peritonitis appeared, and the mother died twenty-four hours after delivery. Rupture of the uterus and vagina were found at the autopsy. Three other cases of uterine lacerations in breech presentation in contracted pelves were given, and after a study of the mechanism of this tendency to laceration he came to the conclusion that it will be best to restrict version to cases in which there are other reasons for it than the mere existence of flattening—some of these being the presence of the occiput on the smaller side of an unequally contracted pelvis, the saggital suture over the symphysis pubis, presentation of an ear and prolapse of the cord. He extols the axis-traction forceps in these cases, and exhibited an instrument of his own devising, which he had used in two cases. He has no hesitation in applying the forceps high up in the uterus when the head is arrested at the brim of the pelvis, and cites fifteen cases of such application in proof of his opinion. After some remarks on estimation of the conjugate diameter, he concludes with the following propositions:

In the flat pelvis and in the flat rachitic pelvis decided degrees of disproportion at the brim may be overcome by the natural efforts when the head presents.

In the forceps, and especially in the axis-traction forceps, we have the means of extending still further the possibilities of successful delivery when the head is arrested at the brim. The forceps, judiciously used, is a safe instrument for mother and child. The existence of contraction of the pelvis in itself is no reason for preferring version. In flat pelves with a conjugate diameter of not more than three and one-fourth inches and not less than two and three-fourths inches premature labor should be induced.

Dr. Hirst differs from Dr. Longaker on two points: the propriety of always applying the forceps in flat pelves before the head has become engaged instead of turning and delivering by the breech; and in the propriety of applying the forceps over face and occiput in transverse positions of vertex presentations, as in this latter operation the biparietal diameter must be increased.

Dr. H. A. Kelly agreed with Dr. Hirst. He considered the paper of Dr. Longaker a very timely one, which in all its leading features he must heartily endorse. It is certain that an intelligent use of the axis-traction principle is destined to revolutionize the treatment of labor in contracted pelves. In cases in which craniotomy has been the custom, axis-traction will save many lives. A few important rules should be borne in mind. First of all, Dr. Kelly

would differ from the speaker most decidedly in one practice, and lay down the rule that "axis traction" cannot be applied to the head above the brim. There is no axis above the brim, and any traction on the rod merely causes the head to rotate around its own axis, but can under no circumstances be efficient in inducing it to engage. Axis-traction applies to heads engaged in the pelvis. Again, the ordinary use of this principle should be to *assist the pains*. Further, it is important in using Tarnier's forceps of this model to constantly attend to keeping parallel the shanks of the prehensile blades and the proximal end of the traction rod.

If the handles of the forceps rise during a traction and it is felt by the examining finger that the head has not really advanced, then either the head has rotated in consequence of an excentric grip or the forceps has slipped; and here lies the great difficulty of the Tarnier instrument. The frequency of this accident, together with some other considerations regarding the mechanical construction of the instrument, have demonstrated to my mind the fact that it is only approximately axis traction. He showed a pair of forceps with which he delivered a dwarfed woman two weeks ago of a full-sized live female child through a three-inch conjugate. This pair of forceps was shown him first by Dr. Porak, of the Hôpital St. Louis, Paris; and he believes that by them he attains the most perfect axis-traction which has yet been devised. The principle is applied in a very simple manner to any long forceps. Each of the four blades of the spoons is perforated with a small oval tube as near the centre of the oval of the spoon as possible. Two long tapes are taken and one passed through the holes of one side, the four free ends are brought down under the forceps, and after their application hang out at the vulva. These ends are brought through a hole at the extremity of a traction rod, curved as ordinary traction rods, with the usual transverse handle at the outer extremity; this is then drawn up to the head and the ends of the tapes fastened on the rod at the apex of the angle where the vaginal turns down into the perineal curve. The advantages of this forceps are many: 1. The application is extremely simple. 2. It can be applied to any forceps. The Tarnier cannot be. as it is only suitable to narrow heeled instruments. 3. The child's head is grasped by the centre of its figure owing to the position of the attachment of the tapes. 4. This same factor renders unnecessary the screw which is so dangerous in Tarnier's forceps, as the traction does not tend to force the blades apart, but approximates them. 5. The perfectly movable connection between forceps and rod, *i. e.*, the tapes, allows the head to flex and follow the curve of the pelvic canal. He has used Tarnier rods and the Poullet forceps on the same patient several times, and his experience accords with that of Dr. Porak: where the Tarnier rods fail and the forceps slips, the Poullet forceps holds and works easily. An interesting incident of a short time since shows well the comparative value of axis-traction. He had described his Poullet forceps to a friend who has a large obstetric practice. He soon called him out with a note, "bring your French forceps." He found the head well engaged but wedged tight. The physician had made many well directed vigorous efforts with his own forceps and finally gave up in despair, producing no effect. Dr. Kelly applied the Poullet forceps, and with a moderate traction on the rod, the head moved gently and steadily until it came directly to the outlet without apparent effort. Mr. Gemrig, of Philadelphia, keeps the rods on hand; they are the only essential part of the instrument.

Dr. R. A. Cleeman said there was one feature of Tarnier's forceps which appeared to be barbarous and unscientific, and this feature was retained in the instrument shown; the device of the screw, which is intended, by clamping the blades against the child's head, to prevent the slipping of the instrument. Slipping should be prevented by the proper adjustment of the blades to the child's head and the moderate pressure induced through traction. To accomplish such adjustment in extreme cases a pelvic curve should be given to the shank of the instrument; such adjustment cannot with safety be replaced by the mechanical pressure induced by the screw. (*Amer. Jour. Obst.*, April, 1878, p. 341 et seq.)

Dr. Longaker had not had time to read Dr. Winter's article in the original (*Zeitschrift für Geb.*), but gained his information from an editorial in the *Medical News*, which stated that an expectant plan of treatment and forceps are advised for primiparous and early version for multiparous. He still thinks the occipito-frontal application of the blades does not appreciably increase the biparietal and bitemporal diameters of the fœtal head. It may increase the vertical diameters, as the cervico-bregmatic and sub-occipito-bregmatic. A simple experiment on the mannikin of Budin demonstrated the truth of this proposition. A full term fœtus, still-born, was placed in position at the brim, the sacrum being thrown forward so as to make the conjugate measure three inches. With the axis traction forceps the relative disproportion between the head and the pelvis, which was considerable, was easily overcome. With blades having a sufficiently marked cephalic curve the depression need be but slight. There seems to be some misconception as to what is meant by the head being at the brim of the pelvis. The head is at the brim until the greatest transverse diameter, the biparietal, has passed the plane of the superior strait. With a head entirely above the superior strait the use of any forceps would hardly be appropriate. If fixation of the head could not be secured, version would be the best measure. He did not see how traction exerted by means of tapes could be more efficient than with stiff rods. The fixation screw is a necessity, there being no free hand to make the necessary compression by the handles. Moreover, it is not objectionable. Continuous pressure is avoided by relaxing the pressure in the intervals. This was one of the chief objections urged by the late Albert H. Smith.

A little reflection and application of well recognized principles would dictate the proper method of applying traction. Simpler axis traction forceps have been devised by Breus and by Braun.

(*To be concluded.*)

FOREIGN CORRESPONDENCE

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Antiseptic Pulmonary Medication—Pathogenesis of Renal Congestion—Hypnotic Anæsthesia.

In a lecture on "Antiseptic Pulmonary Medication," recently delivered, Prof. Dujardin-Beaumetz says, that antiseptic pulmonary medication, such as it may be imagined in an ideal manner, constitutes the most important therapeutic measure for pulmonary affections. The air being the greatest factor of the contagiousness of diseases, if one could succeed in removing from it the infectious germs which it contains, one would have rendered the greatest service to medicine and to hygiene. Thanks to the interesting researches of M. Pasteur, and to the patient investigations of Dr. Miquel, we know the number of microbes contained in a limited volume of air, and we know that the greater part of these micro-organisms are aërobies, that is to say, they require oxygen to live and develop. Whilst on the summit of Mont Blanc, microbes are rarely found in the air, in cities, on the contrary, they abound, and their number varies according to the place. Thus, at the park of Montsouris (which is one of the most elevated positions in Paris, one finds only fifty-one microbes to each cubic metre, in the Rue de Rivoli, a street that runs along the buildings of the Louvre, the Palace, and the garden of the Tuilleries the number amounts to 680 for the same space, and they are found still more numerous in the confined air of the rooms of apartments and in the wards of hospitals. In a bed-room in the Rue Monge, in the neighborhood of the Jardin des Plantes, they attain the figure of 5,260, but in the wards of the hospitals they literally swarm, for in one ward alone in La Pitié Hospital 28,000 to the cubic metre were found.

Attempts have been made to prevent the penetration of microbes into the breathing passages, and several works have been published on the subject. It is true that by a happy arrangement, man breathes only accidentally by the mouth, and that air penetrates particularly by the nasal fossæ which, by their anfractuosities, pretty well represent the arrangement of the filtering balloons employed by Pasteur for purifying the air. But this filtration is evidently often incomplete, as it is by the pulmonary passages that contagious and infectious maladies are transmitted. Among the antiseptic gases, the author places at the head of the list sulphurous acid, basing his theory on the experiment that a dose of 20 grammes per cubic meter, sulphur destroys micro-organisms plunged in a liquid, and that a dose of 40 grammes destroys the same micro-organisms in a state of desiccation; but unfortunately this gas is not respirable.

The discovery of the microbe of Koch in 1882, to which must be joined the more recent one of the microbe of Friedländer in pneumonia, indicates the therapeutic measures that should be adopted for the future, which consist principally of two; the one by which we should endeavor to oppose by medicinal means the multiplication of bacilli, and the other by which we should endeavor to modify by hygienic means the culture soil of these same bacilli. Prof. Germain Sée, in his work on bacillary phthisis has, since the discovery of Koch, insisted on the direction which the therapeutics of tuberculosis should take, and the conditions which the anti-virulent agent which he calls "necrophytic" should fulfil, to attain the object proposed. To the first group of these agents belong principally medicinal inhalations, and medicines which are eliminated by the lungs. It was with this idea the elimination by the pulmonary surface, Dr. Bergeon has proposed rectal injections of sulphohydric and sulphurous acids, having carbonic acid for the vehicle. The medicinal inhalations consist of iodine, iodoform, eucalyptol, corrosive sublimate, carbolic acid, in a word the antiseptics the least irritating should be prescribed. Besides inhalations against phthisis, Listerian sprays have been employed in this affection. The lecturer considers the latter inferior to inhalations, as it was only exceptionally that the sprays penetrate into the interior of the lungs.

In a recent communication to the Medical Society of Hospitals on the mechanism of the pathogeny of renal congestion, Dr. Albert Robin reported two cases which led him to conclude that cold excites the reflex functions of the kidneys, which in consequence do not allow the waste tissues of the organisms to pass through. These latter, not being eliminated, intoxicate the patient at different degrees, according to the duration of the suppression of the functions of the kidneys. Dr. Pitres recently presented at the Anatomical and Physiological Society of Bordeaux a hysterical woman, easily hypnotized. She was habitually hemianæsthetic on the right side, the left side of the body having preserved its normal sensibility. The patient was affected on the left thigh with an abscess caused by a subcutaneous injection of morphia. The tumor was fluctuating, and the surrounding parts were considerably inflamed and very sensitive, so much so that it was impossible to touch the abscess without causing great pain, in consequence of which the patient refused to allow it to be opened. She was then put to sleep by the operator simply fixing his eyes upon her (hypnotic sleep), she was then desired by him to allow him to open the abscess without feeling any pain after being awakened, even if a bistoury should be plunged into the skin. The patient was then awakened from her hypnotic sleep, the abscess was incised, the skin having been cut through layer by layer. A claret wine glassful of a thick, creamy reddish colored pus escaped. The edges of the wound were strongly pressed to evacuate the pus. During the whole of the operation, the patient looking at the surgeon with a smile, never offered a single complaint. She then expressed her astonishment that after so much suffering the surgeon should have been able to open the abscess without causing her any pain.

A. B.

DOMESTIC CORRESPONDENCE

VAGINAL TAMPONNEMENT—GALVANIC MEASURE.

Dear Sir:—I beg the privilege of your pages for the correction of some statements which have of late appeared in various numbers of THE JOURNAL, as they concern subjects in which I am especially interested, and which I believe to be of great practical importance.

First, as regards the vaginal tampon: In your issue of March 27, 1887, Dr. Etheridge, in an article entitled "Antiseptic Tamponnement of the Vagina in Pelvic Inflammation," page 344, conveys the idea that in my "Dry Treatment," *I use medicated cotton throughout for all conditions*, and very correctly says that he has found considerable satisfaction from the use of iodine, tannin, iodoform and other prepared cotton tampons in the treatment of pelvic inflammation. Thinking that he had followed out my plan he failed, as he naturally must do as he understood it, and he has now found the antiseptic wool to be the material for tamponnement in inflammatory conditions. He is perfectly correct, and as others may have misunderstood my suggestions as Dr. Etheridge has, and may for this reason condemn the "Dry Treatment," I will here reiterate what I have so often stated, what I constantly teach, and what is again emphasized in my paper on "The Details of the Dry Treatment" to appear in an early number of the *American Journal of Obstetrics*, viz: that *for all purposes of support, rest and compression an elastic material, non-compressible, non-absorbent, must be used for the tampon.* I use finely carded sheep's wool or jute, with long and fine fibre, advocating plain, ordinary cotton when these are not to be had, *never prepared cotton.* The *medicated cotton I employ merely as a covering*, more or less thick, according to the object in view.

It is natural that when support, rest, or, in inflammatory cases, compression of vessels is desired, the medicated and absorbed cotton tampon is useless, as it soon mats and is compressed into a firm doughy wad. In such cases I apply my remedy in the form of an outer covering layer of medicated cotton over the elastic jute or wool tampon, and medicated cotton alone; for the entire tampon I rarely use, only in cases where medication solely is desired, and neither support nor compression. The elastic wool or jute tampon coated with medicated cotton has a double advantage over the tampon solely of wool; it assists pressure by medication, and it brings a softer surface in contact with the vaginal tissues, in place of the wool, which, when used alone, I have seen to cause discharge by irritation of the parts by its fibre.

I will moreover add, as Dr. Etheridge lays stress on the new *antiseptic absorbent wool*, that for general use, for the elastic tampon basis I decidedly prefer the *plain* finely carded wool: the material I obtain is whiter, finer and of longer fibre, and more elastic than the prepared absorbent wool. It is elasticity that we want, and the quality is deteriorated by the process of preparation; the wool is rendered less effective for the very purpose by preparation. It is the oily, fatty matter which prevents absorption and keeps the fibre elastic, hence I prefer the natural wool, if of good quality, or the jute to all absorbent preparations. I render the tamponnement antiseptic by the powder with which I dust the tissues or which I inclose in the wool, jute or cotton, and as an antiseptic application to the tissues *I know of nothing better than pure bismuth* (subnitrate); this is a most agreeable, soothing application to the vaginal walls, a sedation, a most excellent absorbent, and the very best material to keep the tampon sweet, better than iodoform, and without odor of any kind. Tampons so prepared may remain in place two or three, even four days, without becoming in the least offensive. I trust that this explanation and my coming paper in the *American Journal of Obstetrics* will do away with any lingering belief that I have urged the medicated cotton for aught but medication, or for use as the tampon body.

Secondly, I wish to call attention to some erroneous statements in regard to electric dosage in THE JOURNAL of February 5 and February 12, 1887, which may mislead greatly and which reflect very unfavorably upon American electro-therapy if allowed to stand uncorrected.

In No. 6, February 5, 1887, page 167, Dr. Cutter says that Apostoli uses currents of 1.25 to 1.5 *ampère.*—Apostoli has never used and never claimed to have used currents of such intensity. I presume that Dr. Cutter intended to say that Apostoli had used *125 and 150 milliampères*, which is about *one-eighth and one-seventh of one ampère.* If Dr. Cutter's battery measured 27 to 30 ampères, this does not tell us the intensity of the current actually used upon the patient, as the resistance of tissue and electrodes is not given, and the battery-strength alone does not afford any clue as to the strength of current effectively engaged in action on the diseased part.

In No. 7, February 12, 1887, page 195, Dr. Martin tells us that he has used from 25 milliampères *to 10 ampères* through a fibroid tumor, *with one surface electrode*, and *without causing pain enough to require an anæsthetic.* Ten ampères, *10,000 milliampères* would search the body as would a stroke of lightning. This is impossible. I am glad to see that Dr. Martin is seeking to define and record his treatment more accurately, and that he is resorting to currents of higher intensity. It is a satisfaction to me to see that he has accepted my criticism of his paper which I made before the Section on Obstetrics and Diseases of Women, at the St. Louis meeting of the American Medical Association, in 1886. I then urged the importance of the galvanometer, and the necessity of exact measurement, strong currents and short sittings, if electricity were to be made serviceable in practice, recording successful cases with the use of high intensities, in three and four sittings.

Dr. Martin's later papers prove him a convert, but he is seriously at fault somewhere. No man ever has or ever will pass *ten ampères* (10,000 milliampères) through living tissue, as this would scorch the skin and destroy the activity of the nerve tissue.

The scientific world was astounded when Apostoli employed 100 milliampères, which he has increased to a possible 250 milliampères (I have even used 280 milliampères with one surface electrode), but this is a current of utmost intensity with surface electrodes. If we use both poles within the tissues of a part meagrely supplied with nerves, we may use higher intensities, but not with surface electrodes and without anæsthesia. The use of ten ampères with one surface electrode, and without giving excessive pain and burning the integument, is simply impossible, and I feel that the error must be corrected, in order that those desiring to follow may not be lead into mischief, and that foreign operators may not lose faith in American reports.

I have waited so long with this correction, as I had expected some explanation from Dr. Cutter or Dr. Martin in one of the following numbers; but as no statement has appeared, I beg you now to insert this. Very respectfully yours,

Geo. J. Engelmann, M.D.

3003 Locust St., St. Louis, Mo., March 31, 1887.

HAY ASTHMA IN A CHILD EIGHT YEARS OLD.

Dear Sir:—I wish to report the following case of "Hay Fever," because I have not seen any case reported in a subject so young.

Helen O., farmer's daughter, aged 8 years, has been troubled with hay asthma from the middle of June until September, every year since she was 3 years old. During the remainder of the year she is free. During the summer the symptoms are constantly present, worse at times, especially in going into a meadow or cornfield, and her nights are a torture because of her inability at this season to sleep, the dyspnœa being so great. The patient has two aunts in Vermont who suffer from the same malady, and only get relief by going every year to the White Mountains.

When she first presented herself to me, June 22, 1886, she had been suffering for about one week. Her breathing was truly asthmatic, face flushed, nasal passages were obstructed, eyes red and swollen, and suffused with tears. Her temperature was 100° F. An examination of the nasal passages revealed much tumefaction of the turbinated bodies. After the application of a solution of cocaine, it was seen that the lower turbinated bones on both sides stood away from the outer wall of the passage toward the septum, and on the right side the bone was in actual contact with the septum.

On July 1, with the nasal cutting forceps, I removed a portion of the right lower turbinated bone. This was followed by a vaseline spray, and at intervals of a few days by applications of glacial acetic acid in both nostrils. After the operation repair took place kindly, all symptoms of the disease disappeared promptly and have not yet returned.

Yours truly,

H. Moulton, M.D.

Stuart, Iowa, April 7, 1887.

BOOK REVIEWS.

Medical and Surgical Memoirs: Containing Investigations on the Geographical Distribution, Causes, Nature, Relations and Treatment of Various Diseases. 1855–1886. By Joseph Jones, M.D., Professor of Chemistry and Clinical Medicine, Medical Department of Tulane University of Louisiana; Visiting Physician of Charity Hospital; Honorary Fellow of the Medical Society of Virginia, etc., etc.

Volume II. Containing Researches on the Origin and Effects of Epidemic, Endemic, Infectious and Contagious Diseases; Investigations on the Nature, Causes, Relations and Treatment of Malarial (Paroxysmal) Fever, Intermittent, Remittent, Pernicious and Hæmorrhagic Malarial Fevers; Comparative Pathological Anatomy of Malarial, Typhoid and Yellow Fevers; Indigenous Remedies of the Southern States; Albinism in the Negro Race; Oriental Leprosy; Elephantiasis Græcorum, Elephant's Leg (Elephantiasis Arabum). New Orleans, La.: Joseph Jones, M.D., 156 Washington Avenue, cor. Camp Street, Fourth District. 1887.

Such is the title of a ponderous volume of more than 1,300 pages, copiously illustrated, and containing a large part of the results of a lifetime of untiring, methodical, yet varied and intelligent observation and research. The first volume of Dr. Jones's Medical and Surgical Memoirs was published in 1876, and was occupied largely with the results of his studies and observations concerning diseases of the nervous structures of the body, the various morbid conditions of the blood, pneumonia, etc. It embraced 820 closely printed pages, constituting a most valuable storehouse of facts hardly to be found elsewhere.

The second volume, just issued from the press, is printed on good paper, plain type, with many fairly well executed plates, and substantially bound. It is not a systematic treatise on practical medicine, or on any special department of medicine, but is rather an aggregation of the author's studies and observations concerning a large number of most important diseases, accompanied by the results of long continued original researches, not only at the bedside of the sick, but in the morgue and the chemical and microscopical laboratories, and is consequently a storehouse of etiological, histological and pathological facts of great value. Even a brief analysis of the contents of this extensive work would occupy more time and space than we can give, but the reader may form some idea of their nature and importance from the general heading of the several chapters as follows:

Chapter 1. Investigations on endemic, epidemic, infectious and contagious diseases, and on the nature, causes, relations and treatment of malarial paroxysmal fevers; mode of investigating the origin, nature and effects of malaria; classification of the various forms of malarial fevers. Occupying 59 pages. Chapter 2. Physical and chemical characters and changes of the blood in malarial fevers and other

diseases—210 pages. Chapter 3. Comparison of the changes of the blood in malarial fever and other diseases, pyrexial and phlegmasial; microscopical characters and changes of the blood in various diseases; micro-organisms in malarial fever and other diseases—221 pages. Chapter 4. Hæmorrhagic malarial fever; malignant forms of malarial paroxysmal fever; malarial hæmaturia—199 pages. Chapter 5. Circulation, respiration, temperature, state of the skin, tongue, and changes of the urine in intermittent, remittent and congestive fever. Principles of treatment based upon these observations—142 pages. Chapter 6. Pathological anatomy of malarial fever. Changes of the organs and tissues, and apparatus of the bodies of those who have died with the different types of malarial fever, intermittent, remittent and congestive. Comparison of these changes with the phenomena of malarial fever, and with similar changes in other diseases, and with the organs, tissues, and apparatus of men and animals in the normal condition—149 pages. Chapter 7. Treatment of malarial fever. Prevention of malarial fever. Indigenous remedies of the Southern States of the United States of America; which may be employed as substitutes for sulphate of quinia in the treatment of the various forms of malarial fever. Prevention of malarial fever by hygienic, dietetic and therapeutic measures. Principles of the treatment of the various forms and effects of malarial fever—152 pages. Chapter 8. Changes of color in the human race. Observations and researches on albinism in the negro race—28 pages. Chapter 9. General observations on leprosy in America. Chapter 10. Yaws, libbens, sivvens, pian, epian, frambœsia, syphilis Ethiopica. Chapters 11, 12. Leprosy, elephantiasis Græcorum. Notes on the history of leprosy in the Southern States. Chapter 13. Etiology: Causes and origin of leprosy (elephantiasis Græcorum) in North America, and more especially in the valley of the Mississippi River. Chapters 14, 15. Morbid anatomy of leprosy; bacillus lepræ. Chapters 16, 17. Treatment of Oriental leprosy; views of the older writers. Elephantiasis Arabum, elephant's leg, Barbadoes leg.

The volume is illustrated by 127 engravings, some of them colored. For more than thirty years the author has been actively engaged not only in the general field of practice, but also in the special departments of hospital, sanitary, and military work, and has at all times brought to his aid in the investigation of the causes, nature and results of disease a thorough knowledge of analytical chemistry and of microscopy. His original researches have not been undertaken for the purpose of rectifying or refuting the theories or discoveries of others, but rather for the simple purpose of gaining a more perfect knowledge of whatever came before him relating to etiology and morbid changes in the fluids and solids of the human body. Consequently, every page of the volume bears the individual impress of the author, and is, in the true sense of the word, an American work. Yet every chapter shows the author's familiarity with the entire literature of every subject of which he treats. To every intelligent American practitioner this volume would be of more value than ten times its cost, if for no other purpose than as a work of reference; for in it he can find something to throw light on almost every question he meets in relation to the etiology, pathology, therapeutics and prophylaxis of diseases. And we hope that the author, who is his own publisher, will receive an ample pecuniary reward for the sale of so valuable a work.

The Functions of the Brain. By David Ferrier, M.D., LL.D., F.R.S., F.R.C.S., Professor of Forensic Medicine, King's College, London, etc. Second edition, re-written and enlarged, with numerous illustrations. 8vo, pp. xx 498. New York: G. P. Putnam's Sons. 1886.

Our welcome of the masterly work of Professor Ferrier is none the less hearty if it has been delayed so long. It would only be expected that the second edition of the work, published ten years after the first, would be in many respects a very new and much changed work; and such is the case. It was looked upon, from the first, as a thoroughly original work, with nothing of the too frequent mechanical compilation about it. The great advances made in the last few years in the diagnosis of lesions of the brain, and in the surgery of the brain, make such a work interesting to both the physician and surgeon; doubly so too, because it is a subject the proper study and investigation of which present problems of the greatest intricacy and complexity.

The title of the work does not comprehend its entire scope. Including the medulla oblongata, the second and third chapters, containing 57 pages, are devoted to the spinal cord.

A general review of the book may be regarded as unnecessary. Dr. Ferrier is already almost as well known to Americans, and his work as much respected by them, as on the other side of the Atlantic; and we think it quite sufficient to notice the appearance of the second edition of this work.

Lehrbuch der Geburtshülfe für Aerzte und Studirende. Von Dr. Paul Zweifel, ordentlicher Professor und Director der geburtshülflich-gynäkologogischen Klinik in Erlangen. Mit 212 Holzschnitten und 3 Farbendrucktafeln.

Elements of Obstetrics for Physicians and Students. By Dr. Paul Zweifel, Professor and Director of the Obstetrical and Gynecological Clinic in Erlangen. With 212 wood-cuts and 3 colored plates. 8vo, pp. iv—792. Stuttgart: Ferdinand Enke. 1887. Chicago: Koelling, Klappenbach & Kenkel.

Those who do not believe in antiseptic, or aseptic, midwifery, would do well to read the first 18 pages of this thoroughly practical book, the product of a man of large experience, and written with all the impartiality of the scientific man. These pages are devoted to the subjects of puerperal fever, disinfection, and the mortality of child bed. He wastes no time in theoretical discussion; to him puerperal fever is not the result of occult atmospheric conditions; disinfection does not mean to him the killing or disguising of a smell; the prophylaxis of puerperal fever is not to

be settled by men who have half a dozen cases of midwifery during a year.

The discussion of the pathology of pregnancy, labor and child bed, occupy almost 300 pages, and is thorough. The remainder of the book is devoted to obstetric operations. The whole work is singularly free from the redundancy and unnecessary wandering off into minor details, the positive verbosity in fact, which is frequently characteristic of German writers, and unlike most foreign books it has a good index. One gets and retains the idea all through that the author wrote it because he had something to say, not because he simply wished to write something.

MISCELLANEOUS.

Illinois State Medical Society.—The thirty-seventh annual meeting of this Society will be held in the Methodist Church Block, corner of Clark and Washington streets, Chicago, commencing on Tuesday, May 17, at 10 o'clock A.M. All regular City, County and District Medical Societies in the State are entitled to *one* delegate for every *five* of their resident members.

The following standing and special committees are expected to report:

On Practice of Medicine—Daniel R. Brower, of Chicago, A. K. Vanhorn, of Jerseyville, and P. H. Oyler, of Mt. Pulaski.

On Surgery—D. A. K. Steele, of Chicago, C. Goodbrake, of Clinton, and B. F. Crummer, of Warren.

On Obstetrics—Ellen A. Ingersoll, of Canton, C. DuHadway, of Jerseyville, and W. H. Conibear, of Morton.

On Gynecology—Otho B. Will, of Peoria, J. M. Armstrong, of Evansville, and Catherine Miller, of Lincoln.

On Drugs and Medicines—J. G. Tapper, of Elgin, T. M. Cullimore, of Jacksonville, and Maria J. Mergler, of Chicago.

On Ophthalmology and Otology—S. J. Jones, of Chicago, A. E. Prince, of Jacksonville, and C. R. Parke, of Bloomington.

On Diseases of Children—Geo. W. Jones, of Danville.

On Physiology—A. Wetmore, of Waterloo.

On Dermatology—H. J. Reynolds, of Chicago.

On the Diseases of the Throat and Nose—E. Fletcher Ingals, of Chicago.

On Hydrophobia—Geo. N. Kreider, of Springfield, and others.

President—Elias Wenger, of Gilman.

Permanent Secretary—D. W. Graham, of Chicago.

Chairman of the Committee of Arrangements—Ephraim Ingals, of Chicago.

Bacteriological Laboratories in Siberia and Russia.—The Medical Society of Irkutsk, the capital of Eastern Siberia, will soon have a "bacteriological station" in the little city of 40,000 inhabitants. The Kharkov Medical Society has received from the Kürsk Government Assemply 1,500 roubles (about $750) to establish a bacteriological laboratory in Kharkov, and will receive 700 roubles yearly to support the laboratory.

Missouri State Medical Association.—We are informed by Thos. B. Jackson, M.D., Chairman of the Committee of Arrangements, that the next annual meeting of the Association will be held in Macon, Mo., May 10, 11 and 12. A full attendance is expected.

Health in Michigan.—For the month of March, 1887, compared with the preceding month the reports indicate that erysipelas, measles, tonsilitis, and consumption of lungs increased in prevalence. Compared with the preceding month the temperature in the month of March, 1887, was slightly higher, the absolute humidity and the day ozone were about the same, the relative humidity and night ozone were less. Compared with the average for March in the nine years, 1879–1887, measles and erysipelas were more prevalent, and remittent fever, intermittent fever, pneumonia, scarlet fever, influenza, bronchitis and diphtheria were less prevalent in March, 1887. For the month of March, 1887, compared with the average of corresponding months for the nine years 1879–1887, the temperature was lower, the absolute humidity and the ozone were about the same, the night ozone slightly less.

Including reports by regular observers and others diphtheria was reported present in Michigan in the month of March, 1887, at forty-six places, scarlet fever at fifty-two places, typhoid fever at thirteen places, and measles at thirty-five places. Reports from all sources show diphtheria reported at twelve places more, scarlet fever at ten places more, typhoid fever at three places less, and measles at eleven places more in the month of March, 1887, than in the preceding month.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 2, 1887, TO APRIL 8, 1887

Capt. John Van R. Hoff, Asst. Surgeon, ordered for duty at Ft. Reno, I. T. S. O. 43, Dept. Mo., April 4, 1887.

Capt. W. H. Corbusier, Asst. Surgeon, granted leave of absence for one month. S. O. 35, Dept. Ariz., March 29, 1887.

Capt. H. G. Burton, Asst. Surgeon, ordered to Plattsburg Bks., N. Y., for temporary duty. S. O. 78, A. G. O., April 5, 1887.

Capt. L. A. La Garde, Asst. Surgeon, ordered for duty at Ft. Assiniboine, M. T. S. O, 78, A. G. O., April 5, 1887.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDED APRIL 9, 1887.

Bailhache, P. H., Surgeon, detailed as chairman Board of Examiners, to meet in Washington, April 25, 1887. April 4, 1887.

Purviance, George, Surgeon, detailed as member Board of Examiners, to meet in Washington, April 25, 1887. April 4, 1887.

Godfrey, John, Surgeon, detailed as recorder Board of Examiners, to meet in Washington, April 25, 1887. April 4, 1887.

Irwin, Fairfax, P. A. Surgeon, to proceed to Baltimore, Md., on special duty. April [illegible], 1887.

Pettus, W. J., Asst. Surgeon, to proceed to Norfolk, Va., for temporary duty. April 4, 1887.

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ORIGINAL ARTICLES.

TREATMENT OF FIBROID TUMORS OF THE UTERUS BY ELECTROLYSIS, WITH A DESCRIPTION OF APOSTOLI'S METHOD.

Read before the Chicago Medical Society, Dec. 20, 1886.

BY FRANKLIN H. MARTIN, M.D.,

PROFESSOR OF GYNECOLOGY IN CHICAGO POLICLINIC; CLINICAL LECTURER ON GYNECOLOGY IN SOUTH SIDE DISPENSARY, CHICAGO; FELLOW OF CHICAGO GYNECOLOGICAL SOCIETY, ETC.

Unfortunately, the term "electrolysis," as applied to the treatment of disease, has been by many, for some unaccountable reason, greatly misunderstood. Because an electric battery is one of the requisites of treatment by electrolysis, the term has become synonymous with any form of electrical application, whether of the galvanic, faradic or static variety. This is a mistake. To successfully treat any particular diseased condition by electrolysis, certain scientific principles are involved, that are as necessary for us to understand as it is for an inventor to understand certain scientific principles before he can successfully construct an electric motor.

Electrolysis is simply an expression for an electrical phenomenon. It is necessary for us to have certain conditions present in order to obtain this phenomenon: 1. A continuous current of electricity; 2, an electrolyte; 3, means of conveying the current through the electrolyte. And unless we have present in every case upon which we operate these requisites, and bring them into such relationship that the electrical current conveyed through the electrolyte by means of suitable conductors will dissolve the molecules of the electrolyte into their constituent elements, we do not get electrolysis.

So far as the phenomenon electrolysis has been utilized in medicine, it has been for the purpose of removing abnormal tissue. In order to accomplish this, certain other requisites are necessary. 1, the tissue to be dissipated must be an electrolyte or contain electrolytes; 2, the tissue must be in a position where it may be electrolysized without endangering neighboring tissues; 3, its surroundings must be such as will favor the removal of the *ions* by absorption or otherwise, that have been freed by the electrolytic action; 4, some means of ascertaining the strength of the current must be at hand.

Before considering the above points more in detail, I wish to refer to two other phenomena of the constant galvanic current, which do not properly come under the head of electrolytic action, but which are utilized in the treatment of fibroid tumors. I refer, 1, to the cataphoric action of the current; 2, to the local effects of the two poles.

The subject of the treatment of fibroid tumors of the uterus by the continuous galvanic current, therefore, presents the following points for our consideration: 1. The tumor. 2. Means for generating a continuous current of electricity. 3. Means of measuring or gauging the current. 4. Electrolytic action of the current. 5. Cataphoric action or electrical osmosis. 6. Local effect of the poles. 7. The apparatus and general detail.

I. *Consideration of Tumors.*—I will not go into a long discussion of the history, causes and pathology of fibroid tumors of the uterus, because it does not particularly bear upon the subject of the evening. However, to facilitate a description of my method of treatment, I will make the old division according to location into, 1, submucous; 2, interstitial; 3, subperitoneal. The nomenclature of this division sufficiently explains itself. To still further expedite matters, allow me to divide these tumors according to their condition, into the hæmorrhagic and the non-hæmorrhagic. By hæmorrhagic we will include those tumors that produce from a simple excess of the menstrual flow to the most alarming continuous hæmorrhage. The non-hæmorrhagic will include all others.

II. *The Current.*—The current of electricity used in electrolytic therapeutics should be one of moderate quantity compared to the intensity. It should be very uniform and without interruption. The direction of the current should always be known. Any means of generating electricity that will be practicable, and at the same time answer the above requirements, will be suitable for our purpose. I have found nothing better than some form of the chemical battery. In the beginning of my work with electrolysis I used some form of the ordinary zinc and carbon battery with a solution of dilute sulphuric acid and bichromate of potash. For purposes of epilation, strictures of the urethra and uterine canal, and other of the smaller operations, this battery answers the purpose admirably, where it is properly cared for. For accomplishing more decided work, however, this variety of battery becomes impracticable, because of the labor required to keep it in proper order. The results of my experiments have led me to adopt for office purposes the ordinary crowfoot gravity cell. This cell is furnished to me by the

McIntosh Galvano-Faradic Co., of this city. These cells are coupled in tandem, and connected with a selective switch board arranged in such a manner that any number of cells from any part of the battery can be brought into the circuit. A large number of these cells can be placed in a closet or other convenient place and attached to the switch-board by means of a cable of wire. The storage battery can be utilized for this purpose, but is as yet impracticable for long and constant work. The dynamo has been suggested, and will without doubt, with time and improved motors, take the place of all other forms of generating electricity for office use, both for cautery and, with proper resistance coils, for electrolytic work.

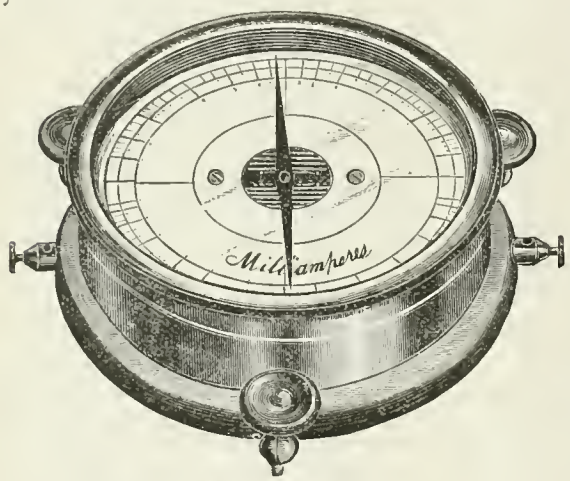

Fig. I.—McIntosh's Milliampère Metre.

III. *Measurement of Current.*—With the advance in electrical therapeutics we have found it necessary to adopt some means of measuring approximately the strength of current employed. Especially is this desirable when the enormous strength of current is used that is necessary in the treatment I am describing. It is unwise to employ a current of more than 25-milliampère strength through the vital tissues of the body, without being in a position to watch every variation of intensity, and this can only be determined with accuracy by the employment of a galvanometer (Fig. 1). I take pleasure in being able to exhibit a galvanometer to the Society this evening that answers all requirements for therapeutic purposes. This instrument was constructed, after a large amount of work and experimentation, by Dr. McIntosh, of the McIntosh Galvano Faradic Co., of this city. It has been graduated in the presence of an absolute galvanometer, and each instrument that is constructed is graduated by actual comparison in the same way, which is a point that is absolutely necessary if accuracy of measurement is to be obtained. Many of the galvanometers that have been thrown upon the market of late, for medical purposes, have been little better than worthless. This instrument is graduated for milliampères, and will measure accurately a current from 1 to 1,000-milliampère strength.

The maximum current that can be safely passed through the body, consistent with our present experience and knowledge, is about 1,000 milliampères. To get this power I use a battery composed of 115 gravity cells.[1]

IV. *Electrolysis*, the principal action that we seek in causing the absorption of fibroid tumors or any other pathological growth, is not a new phenomenon in electro-chemistry. This action has been utilized in the commercial world for a number of years, and its value is constantly increasing. The same principle that is used in electro-plating can be made valuable in medicine, in relaxing the loosely combined elements of a fibroid tumor and causing their deposit where they will be carried from the system.

A strong current of electricity is passed through a growth of this character, and in its substance it finds many electrolytes which are dissolved into their constituent elements. These elements, according to their electrical tendencies, travel toward the negative or the positive pole of the battery, and may be disposed of in the following four ways: 1. "Many of them immediately make similar or dissimilar combinations with neighboring elements of opposite electrical tendencies, making thereby new compounds which act as foreign particles; as foreign bodies they are promptly removed by the nearest absorbents. 2. Other elements, as they become free from their original molecules, make combinations with elements which are already leaving the tissues through one of the innumerable minute vascular canals. 3. Many, in the form of gas, pour into the atmosphere beneath and surrounding the electrodes. 4. Others attack the electrodes and are disposed of in the form of deposit on their surfaces."

The cataphoric action of the galvanic current should also be recognized as playing its part in the promotion of absorption. It is by this property that fluids are determined in mass from the positive to the negative pole. This action, in producing an unnatural turgescence of fluid at the negative pole, favors its osmosis into the surrounding absorbents, and thereby accomplishes its removal.

The local effect of the current at the two poles of the battery is very different with a high tension current. The effect of the positive pole is termed by Dr. Apostoli the galvano caustique effect of the positive pole. This is an action of a great deal of importance, and from which a great advance is contributed in the treatment of hæmorrhagic fibroid tumors of the uterus. The phenomenon is obtained only by the employment of a very strong current, from 50 to 1,000-milliampère strength, and concentration of this current at the point of contact of the positive pole of the battery to the tissues. This electrode must be of small size, and of some unattackable metal. The effect obtained upon vascular tissues or mucous membrane by thus concentrating the current is to produce an eschar. This eschar, however, if the current has been proper, will be found to be simply a coagulation and a hardening of the mucous membrane and the tissues beneath it for some little distance. This process of contraction and coagulation modifies the calibre of the vessels of the circulation so that hæm-

[1] Since writing the above I have been able to use still higher currents in special cases.

orrhages are less liable to occur at the point of application; at the same time it does not destroy the circulation sufficiently to produce strangulation and death of the part. There is nothing that will so effectually stop all forms of excessive hæmorrhages or leucorrhœa, without producing a troublesome slough, and a subsequent contraction, as this particular application of electricity when made to the mucous membrane of the uterus.

The local effect of the negative pole is the opposite of that of the positive when the current is strong and concentrated. The action of this pole is one of liquefaction instead of hardening and coagulation. Its eschar resembles much that of a caustic alkali.

V. *The Electrodes* used in the treatment of fibroid tumors by Dr. Apostoli's method are few in number. Two electrodes are always necessary at every operation. One of these is applied externally on the surface of the body, the other in some form internally. Where powerful currents are employed, such as I have described, the first object is to devise means of conducting them through the parts desired, without producing harm to innocent tissues, or pain to the patient. One pole, the internal, is usually the active one. This is either a sound that fits accurately the uterine canal, or a pointed electrode which enters a presenting portion of the tumor. This is constructed of unattackable metal, platinum when in form of sound, platinum and iridium when in form of needle.

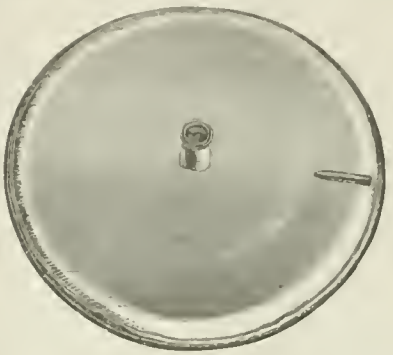

Fig. III.—Martin's Abdominal Electrode.

soft metal, of appropriate dimensions, has loosely stretched over its concavity an animal membrane which is fastened to its circumference securely enough to render it water-tight. Between the concavity of the disk and the membrane is left a space one and one-half inches in thickness, which is filled with a warm saturated solution of chloride of sodium. The electrode is filled through a stopper on the surface of the metal. The connections are also made from this surface.

This electrode, when filled, is applied to the surface of the body so that its membrane surface is in contact with the skin. It adapts itself accurately to all irregularities, covers a large surface, and causes a

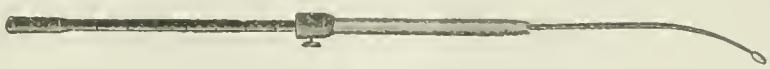

Fig. II.—Martin's Inter-uterine Electrode.

Some means of insulating the vaginal portion of the electrode must be devised. (Fig. 2.) Needles used in electrolysis should be insulated up to within one inch of the point in order to protect external tissues. After the proper internal electrode has been selected and placed in position, and before the current is turned on, the circuit of the battery must be closed by applying some form of convenient electrode externally that will give the minimum resistance without excessive pain. This has been one of the most difficult things to accomplish in the use of strong currents. This external electrode should be placed upon the abdomen in as close proximity to the internal one as possible. It should have a large surface in order to diffuse the current. All parts of the surface should conduct equally, and fit accurately into all irregularities of the surface.

Dr. Apostoli at last hit upon the following plan, which he has found to answer the purpose perfectly: A mass of potter's clay is made about into the consistency of soft dough by moistening with water, and is then spread upon the abdomen of the patient in a mass an inch or more in thickness. This is connected with the battery by placing upon its free surface a plate of soft metal with appropriate connections. This apparatus, while it answers the purpose, is a very inelegant form of electrode. In this direction I am able to offer a very decided innovation. Dr. McIntosh has succeeded in constructing for me this electrode (Fig. 3). A concave disk of

diffusion of the current so perfectly, and makes connections so complete, that I have been able repeatedly to use a current of 75 to 1,000 milliampères without producing the slightest blistering of the integument and without producing even a disagreeable sensation.

VI. *Details of Application.*—There are three distinct operations that are called for in the rational treatment of fibroid tumors of the uterus by electrolysis. They vary both according to symptoms and conditions. The first that I will consider is for the relief of excessive hæmorrhage. I consider this of first importance because it is one of the most distressing symptoms we meet with in dealing with these difficulties, and a symptom which often baffles every other resource.

I will not go into a description of the different conditions that *may* be present in hæmorrhagic fibroids, but will confine myself to the few conditions that must be present to allow of benefit from this treatment. We have excessive hæmorrhage which may be continuous or periodic. The hæmorrhage is from the cavity of the uterus. The uterine canal must be accessible to a flexible probe. There must be no acute metritis, peri- or parametritis present. With these requisites, positive and negative, we may proceed to operate. An assistant, if the patient is reasonably strong, is not necessary. The application is preferably given in the office.

The patient's clothing is loosened, and she is in-

structed to assume the dorsal position upon an operating chair or table. A speculum is introduced or not according to convenience of operator, and the direction, size and depth of the uterine canal is ascertained by means of a soft metal probe. A uterine sound electrode composed of pure platinum, corresponding as nearly as possible with the size of the uterine canal, is selected, and made to conform to the general direction of the canal as indicated by the probe. This electrode is then introduced to the bottom of the uterus, and the insulating shield is pushed up until it touches the cervix and covers perfectly the intra-vaginal portion of the metal. When the electrode has been satisfactorily applied and connected with the positive pole of the battery, Martin's large abdominal electrode, properly prepared and attached to the negative pole of the battery, is applied to the lower portion of the patient's abdomen in such a manner as to bring its whole surface in contact with the skin.

After the electrodes have been securely placed and the connections are found to be perfect, the operator should commence turning on the current. This should be done very gradually at first in order that the patient may experience no shock. If the patient complains of a dull pain internally while the current is being increased, the operator should stop for a few seconds, and he will often find that the pain will cease, after which the current can again be increased to the desired strength without excessive pain. At the first not more than a 50-milliampère current should be used. If the patient bear this well, it should be increased at each succeeding operation until a strength of from 100 to 500 milliampères is obtained. The first operation should last about five minutes, and if well borne the succeeding ones can safely be lengthened to ten or twelve minutes. In finishing the operation the current should be decreased in strength a cell at a time very slowly, until it is entirely excluded. After the operation the patients should remain quiet for half an hour, when they can return to their homes, with instructions to keep very quiet for at least twenty-four hours.

This operation has two effects. It checks hæmorrhages, and reduces the size of the tumor. The local coagulating effect of the platinum electrode upon the inner surface of the uterine canal checks the hæmorrhage, and the electrolytic effect of the powerful current through the tumor favors its absorption. A number of repetitions of the operation are necessary to control severe hæmorrhages. It is impossible, at one sitting, for the internal electrode to come in contact with all the surface of the canal, no matter how much pains may be taken to make an accurate adjustment. Nothing but repeated operations can accomplish this. Unless the current is too strong there will be but very little subsequent sloughing at the place of contact of the positive pole. If troublesome sloughing *should* occur after an application, a somewhat weaker current should be used afterwards. It must be remembered that coagulation, and not cauterization of the tissues, is the point sought.

The second operation to which I will call your attention is for the reduction of tumors that have grown in such a manner that they have distended or occluded the uterine canal so that it will not admit a sound electrode, and thereby renders intra-uterine *treatment proper* impossible. In these cases an *artificial* canal should be established in the obstructing portion of the tumor by means of negative-galvano-puncture entering the tumor from the cervical canal. For this operation the patient is also placed in the dorsal position. The position of the cervix is ascertained, and by aid of a proper speculum a sharpened probe of platinum and iridium is thrust a safe distance into the centre of the presenting fibroid. The vaginal portion of the electrode is properly insulated as in the other operation, and is then connected with the *negative* pole of the battery. The abdominal electrode is attached to the positive pole and applied as for the previous operation, and with proper precautions the current is gradually turned on until the desired strength is obtained, this being as high as 150 milliampères, often without pain or harm to the patient. Contrary to ordinary expectations, the *pain* produced by this operation is not sufficiently severe to require an anæsthetic, and with the exception of the first séance, when the new canal is established, the succeeding treatment is no more disagreeable than the ordinary use of the internal electrode in the uterine canal. Before any internal needle or puncture operation a vaginal injection of 1 to 5000 bichloride of mercury should be given, and repeated each day as long as the treatment is continued. An interval of about five days should elapse between the first and second applications, and the duration of the séance should be from five to ten minutes.

The first effect derived from the employment of this method is the establishment of a new channel to take the place of the distorted and obstructed uterine canal and by which subsequently the tumor will be treated. The second effect is the direct electrolytic action of the current upon the growth. The channel left after the withdrawal of the probe is somewhat larger in diameter than the electrode itself, and will remain for a number of days penetrable to the probe. There is but slight suppuration from its surface, but should there be any considerable hæmorrhage from the artificial canal, one application of the electrode with the current reversed making the positive pole the internal will give relief. One imperative point in these operations is the proper selection of poles to be employed. The immediate effect of the negative pole is to liquefy the tissues with which it comes in contact like a caustic alkali, and it should be selected for the establishment of a canal, while the effect of the positive pole is to coagulate and harden tissues coming in contact with it, like a caustic acid, and it should always be employed to check hæmorrhage either from the artificial canal or the natural uterine canal itself. Therefore for the rapid reduction of the tumor the negative pole is decidedly preferable, and should always be applied unless the presence of hæmorrhage demands the use of the positive.

The third and last operation to which I will call your attention is the extra-uterine galvano-puncture, or the needle operation proper. Tumors that call for this form of treatment are those that are not

amenable to the other two forms already considered.

This variety, usually of the sub-peritoneal type, often pedunculated, can be reached either by puncture through the vaginal wall, using great care not to injure the bladder or other important organs, or where this is not feasible by puncturing through the abdominal wall. Everything else being equal, the needle should be introduced into the tumor through the vagina, because if it is at all possible, the tumor lies in contact with the vagina; consequently the tissues that it is necessary for the needle to traverse are unimportant, while the abdominal wall with its fat, muscle, and peritoneal layers is too formidable to penetrate even with a needle unless actuated by absolute necessity. If the puncture is to be made through the vagina, a thorough vaginal injection of the bichloride solution should be employed, and for this operation, unless the patient has more than ordinary fortitude, an anæsthetic should be administered. For this purpose I employ, as preferable, the mixture of equal parts of alcohol, ether and chloroform, on account of its prompt action and transient effects.

After it has been definitely determined that this operation is the only alternative the patient is placed in the dorsal position, and all instruments being in readiness, the anæsthetic is pushed promptly to a surgical degree and then entirely withdrawn. A suitable speculum is introduced and a needle with proper curve, and insulated with hard rubber to within one inch of the point is thrust through the vaginal walls into the tumor. The position of the bladder should have been ascertained by means of a probe or catheter, before commencing work. When the needle has been satisfactorily adjusted the speculum is carefully withdrawn and the needle connected with the negative pole of the battery. The same external electrode, should be adjusted with the same care, and in the same manner as in the other operations described and connected with the positive pole. The current is now gradually turned on until a strength as indicated by the galvanometer is reached of 500 to 1,000 milliampères. In the meantime the patient is allowed to come out from the influence of the anæsthetic, which usually occurs without any struggling; a peculiarity of the anæsthesia by the A. C. E. mixture which makes it very desirable for this work.

This operation should last for about eight minutes the first time, and subsequently, if it is deemed desirable, a longer time can be given. When the operation is terminated, and the current has been gradually withdrawn, the needle will be found loosened and its removal is accomplished with ease and very little pain.

The abdominal operation is performed where the tumor is of the large sub-peritoneal variety, that cannot be safely attacked from the uterus or vagina, and where the tumor rises above the cavity of the pelvis, and is in contact with the abdominal wall. Here, after necessary antiseptic precautions have been carried out, the needle is thrust through the abdominal wall into the substance of the tumor at its most prominent part, and is then connected with the negative pole of the battery. The other electrode, the same variety as described in the other operations, should be placed upon the abdomen in close proximity to the needle. The current should be 300 to 1,000 milliampères strength, and the duration of the operation ten minutes.

Herein I have endeavored to give you an idea of the present status of the treatment of fibroid tumors of the uterus by means of the strong current of electricity. The use of the strong current was adopted by Dr. Apostoli, of Paris, he being the first to devise electrodes and rational means by which it could be made tolerant. To the extent of discussing the strong current and utilizing the coagulating effect of the positive pole for the checking of uterine hæmorrhages, I have described Dr. Apostoli's methods. Otherwise I have not confined myself to any one system, but have endeavored to give the best means, according to my knowledge and judgment, that have been developed, up to the present time, for the relief of this distressing malady. The scope of the subject is too broad to admit its being satisfactorily dealt with in one short paper, and, I therefore beg to submit, at the risk of wearying your patience, the following conclusions, which may cover a few points of importance that time would not allow me to discuss in the body of the paper.

CONCLUSION.

1. A means of generating a continuous current of electricity which can be increased per 10 to 1,000 milliampères in strength, is necessary in order to obtain all the benefits of this treatment.

2. Hæmorrhages from hæmorrhagic fibroid tumors can be cured by the local coagulating effect of the positive pole applied inter-uterine.

3. The inter-uterine electrode, when positive, should be of unattackable metal, conforming as nearly as possible to the size and shape of the uterine canal and having the vaginal portion insulated.

4. When the cervical canal cannot be entered a negative galvano-puncture should be made into the presenting part of the obstructing mass of the tumor and an artificial canal, which is to take the place of impenetrable uterine canal, in all subsequent treatments be formed.

5. The intra-uterine electrode should in all cases be negative, unless there is hæmorrhage or excessive leucorrhœa, when the positive pole is always required. The same patient may, however, present successive symptoms demanding the use of each pole.

6. The strength of the current should be the strongest possible consistent with the desired therapeutic effect and the endurance of the patient.

7. Cases of intolerance of high doses arrange themselves under the three following heads: 1. Hysteria. 2. Enteritis. 3. Acute nephritis, peri- or parametritis; the most tolerant being the deep uterine and profusely hæmorrhagic.

8. The duration of the operation should be from eight to ten minutes, according to the toleration of the patent.

9. The number of operations is necessarily dependant upon and influenced by the result to be accomplished. A severe hæmorrhage can be checked in from four to five séance, while a general reduction of

the tumor necessitates many operations, varied, of course, according to size and location. In many cases simply a restoration to health and a relief from the prominent and annoying symptoms must be accepted as a substitute for an actual cure.

10. The time of commencing the treatment matters but little, if the tumor is not rapidly growing, and no excessive hæmorrhage is present. The operation should be inter-menstrual, if possible, but if hæmorrhage is continuous operate during the flow. The séances should occur two or three times a week if compatible with the endurance of the patient, and should be as regular as possible.

11. Extra-uterine puncture should be regarded only as a last resort, but every means of reaching the tumor through the uterus being impracticable, seek, if possible to make the operation extra-peritoneal, should this in turn prove equally unadvisable, use as a final alternative the abdominal puncture.

12. Strictest cleanliness and thorough antiseptic precautions are absolutely demanded in operations connected with this treatment.

163 State Street, Chicago, February, 1887.

VAGINAL PRESSURE IN THE TREATMENT OF CHRONIC PELVIC DISEASE.

Abstract of a paper read before the Chicago Gynæcological Society, February 18, 1887.

BY A. REEVES JACKSON, M.D.,
OF CHICAGO.

The brief paper which I have to present this evening, was suggested by some remarks, with which the society was favored at its last meeting by Dr. Etheridge, entitled a "Preliminary Note on Antiseptic Tamponnement of the Vagina in the Treatment of Pelvic Inflammation." It would have afforded me pleasure to endorse the treatment which was advocated at that time, had an opportunity been given for so doing, for I have had occasion to make frequent use of it, and to learn its advantages, during the past eight or nine years.

My attention was first called to this subject by reading a paper which was published by Dr. V. H. Taliaferro, of Atlanta, Ga., in 1878, on "The Application of Pressure in Diseases of the Uterus," in which the writer presented many facts and arguments to prove the great therapeutic efficacy of the principle of pressure as applied to the treatment of diseases of the uterus and other pelvic organs, which are characterized by habitual passive congestion and its results, namely, uterine displacements, enlargement, relaxation, cervical erosions, menstrual disorders, etc. The method consisted in firmly packing the vagina with sheep's wool made antiseptic with carbolic acid, with the aid of a Sims' speculum, the patient being in the knee-chest posture. At first Dr. Taliaferro used cotton pledgets, saturated with glycerine, but observing that the cotton packed quite hard, he very soon substituted wool because of its resiliency, a quality with which it was found to retain under pressure and moisture.

[In illustration of the results of this method of treatment, Dr. Jackson detailed a number of instructive cases in which it had been used by him. In one of these, the patient was suffering from supra vaginal elongation of the uterine cervix, complicated with complete cystocele and vaginal eversion, the involuted parts protruding from the vulva and forming a tumor of considerable size. The uterine canal measured six inches. The parts were restored and the vagina packed with cotton, a process which was repeated every two or three days for a fortnight, at the end of which time the depth of the uterus was reduced to three inches. Other symptoms were correspondingly improved. The patient, who had been only able to drag herself along with pain and difficulty, could, after the first packing, move with rapidity and comfort. She was subsequently cured by a plastic operation on the vagina. A number of other cases, some of them furnishing results almost equally striking, were detailed by the writer.]

Dr. Taliaferro strongly emphasized the importance of applying the tampon with the patient in the Sims' position, in order that the vaginal canal should be distended and elongated to its utmost capacity. He further advised that the first few pieces composing the tampon should be of cotton, for the reason that a greater amount of glycerine may be incorporated with that substance than with wool. It was claimed that the therapeutic effects of this treatment are as follows:

1. It diminishes blood supply and nutrition.
2. It promotes absorption.
3. It removes hyperplastic tissue by retrograde metamorphosis.
4. It diminishes nervous action.
5. It rectifies malpositions.

I was much impressed by the stated results of the treatment, and determined to give it a trial. It seemed to promise a valuable substitute in some of the objectionable and uncertain methods of local treatment then and now in vogue, such as cauterization, local blood letting, tents, intra-uterine medication, iodine painting, hot douches, etc. Since then I have used it in many cases of chronic pelvic disease, and am able to corroborate the favorable statements that have been made concerning its efficacy.

Dr. P. F. Mundè, who gives an abstract of Dr. Taliaferro's paper in his "Minor Surgical Gynæcology," edition of 1885, says: "Of the value of this steady and elastic pressure and support in reducing the size of an engorged hyperplastic or (better still) subinvoluted uterus, and restoring the normal circulation to the œdematous and congested pelvic cellular tissue, I have no doubt whatever; neither of the potent alterative effect of this pressure on old peritonitic or cellulitic exudations and adhesions."

I had not applied this dressing many times before I observed occasionally on removing the tampon, that on various parts of the vaginal wall, and also around the os uteri, erosions appeared sometimes bleeding slightly on exposure. I attributed this to the fact that the packing had either been too firmly or unequally placed. In cases of moderate laceration of the cervix uteri, this accident is especially likely to occur if the packing is so applied about the vag-

inal portion in such a manner as to widely open the os uteri. Hence, in all such cases I endeavor to at first push the uterus upward with a single pledget, and then to pack the entire vaginal fornix about it so as to press the cervical labia together as much as possible.

When any part of the mucous membrane appears soft and succulent, I have found advantage in combining with the glycerine a solution of tannin or alum. The contact of glycerine is not equally well-borne by all vaginas, and in a few cases I have not been able to persist in its use on account of the irritation it caused. In these cases I find an excellent substitute in vaseline, which, although it does not produce the peculiar serous drain which comes with the use of glycerine, is unirritating, and makes possible the employment of the pressure, which is the more important element in the treatment.

When I first began to use this pressure treatment I chose carded wool, in accordance with the suggestion of Dr. Taliaferro. But it was difficult to obtain a well prepared article, and next to impossible to incorporate any considerable quantity of glycerine with it. I was obliged to use cotton for the upper part of the vagina. I next tried successively oakum and jute. These substances were elastic—especially the former—and also antiseptic; the former containing tar, and the latter carbolic acid. However, since sheep's wool has been so prepared as to be free from fatty matter, and is comparatively absorbent of water and glycerine, it more completely and perfectly meets the indications than any of the other substances I have named.

As regards the form of the tampon, I have used it both in single and multiple pieces, and unhesitatingly give preference to the latter in many cases. It is very important that the vagina be packed in such a way as to insure an equable pressure against every part. This cannot be so certainly done with a tampon made from a single piece, or a few large ones as with a number of smaller sizes. When moistened the pieces should not exceed a walnut in size. Time may be saved, however, and the object accomplished, by using a single piece of wool for the lower half of the vagina.

Commonly, the only medication I have used with the tampon besides the glycerine or vaseline, has been the occasional addition of tannin or alum. But when, for any reason, I have wished to have the dressing remain longer than two days, I have, after saturating the separate pledgets, rolled them in boracic acid so as to take up two or three drams of the latter.

The cases in which I have found this method of treatment especially beneficial are those which are characterized by soft engorgement—such as the earliest stages of subinvolution, with or without cervical laceration. In these cases I have seen more marked change effected in two weeks than is commonly seen in two months—or more than is seen at all sometimes—under the use of hot water douches, however perfectly and assiduously the latter may be used.

Permit a slight digression. Without wishing to disparage in the least the use of hot water irrigations, in the treatment of chronic pelvic inflammations, I desire to say that for some years I have held the opinion that their efficacy great as it is, has been overrated. Indeed, they have been so eulogized that perhaps we have expected more from them than was reasonable. One serious drawback to their usefulness arises from the fact, that the sittings cannot be continued usually for a sufficiently long time. If it were practicable to keep a stream of hot water playing against an inflamed or engorged tissue for thirty hours rather than thirty minutes, we should doubtless obtain more prompt and more permanent results. But as the hot water douche is usually employed, it effects in constricting the over full vessels are of short duration. I have seen a turgid, purplish cervix subjected to a hot stream for forty minutes; at the end of the time it was pale and shrunken; at the end of another hour, the patient continuing meanwhile on her back, I have found the same cervix as turgid and as purple as before.

Now, just on this account, a manifest and very great advantage may be urged in favor of a means of treatment which, equally with the hot water douche, has power to unload the vessels of their stagnant contents, and which may be continued day after day and week after week, without remission and without reaction. Such a means is, I believe, to be found in this persistent pelvic pressure and tissue drainage.

Were it needful I could cite many cases illustrative of the beneficial effects of this treatment, but will content myself with but two.

Case 1.—A married woman, 34 years of age, had two children at term, and subsequently a miscarriage at the fifth month. After this latter event menstruation became more profuse and the periods were protracted. At the end of two years her general health was greatly impaired and she was markedly anemic. Ordinary remedies were used without success. At my suggestion, her physician curetted the interior of the uterus, and then swabbed the cavity with Churchill's solution of iodine. Febrile symptoms followed, and lasted a week. Temporarily there was improvement as regarded the hæmorrhage; but in three months she was worse than before, and rarely free from a bloody discharge. It was then determined that I should repeat the curretting. Remembering the inflammatory sequel to the previous operation, I was moved to pack the vagina a few times as a preparatory measure. She was flowing when the first packing was placed. When the latter was removed at the end of forty eight hours, the only appearance of blood was a slight staining of that portion of the tampon which had been pressed against the os uteri. Another tampon, larger than the first, was placed, carrying the uterus as high as possible in the pelvis. On its removal two days later no blood at all was perceptible. This treatment was continued three weeks, combined with suitable medicinal and hygienic means, with the result of permanently stopping the hæmorrhage, and the ultimate restoration of the patient's health.

Dr. Mundé, in speaking of this means of treat-

ment in connection with another class of cases, uses these words: "When the retro-displaced fundus uteri is adherent, these daily emollient and hydrogogue tampons may in time, by their combined pressure and alterative action, bring about the absorption, or at least stretching, of the adhesion, and permit a replacement of the organ." I submit a case in point.

Case 2.—Mrs J., aged 24 years; had several induced abortions; no child at term. Had been treated for displacement by pessary, with apparent benefit. Afer a time the symptoms returned, and the physician introduced a larger instrument. It caused pain at once, and in a few hours there was a chill and then rise of temperature. I saw the patient next day and advised the removal of the instrument, which was taken away. It was a very large one. A sharp attack of inflammation ran its course in ten days. No abscess formed. A few weeks later I found the uterus retroverted and the fundus immovably fixed by adhesions in its mal position. At the request of the attending physician I then took charge of the patient. The treatment consisted wholly in the use of tampons of cotton with glycerine and boracic acid. The pledgets were small at first, and were placed in the posterior vaginal fornix, pressed into position with as much force as the patient could readily bear. The pledgets were increased in size and others were placed in front of the cervix. The vagina was packed below more and more fully and firmly each time with wool, until the canal was distended to its utmost capacity. At first the dressing was renewed daily, then every two days. At the end of two months the uterus was thoroughly replaceable, all tenderness had disappeared, and no evidence remained of the former presence of adhesions.

A CASE OF INNOMINATE ANEURISM TREATED BY SIMULTANEOUS DISTAL LIGATION OF THE RIGHT CAROTID AND SUBCLAVIAN ARTERIES. RECOVERY.

Read before the College of Physicians, of Philadelphia.

BY H. R. WHARTON, M.D.,

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The following case was operated upon by Professor John Ashhurst, Jr.:

Andrew C., aged 42 years, who was born in Scotland and served for a time in the British army, and whose present occupation is that of a gardener, presented himself at Professor Pepper's clinic at the University Hospital with the following history: Eighteen months before his admission to the hospital he began to experience pain running from the throat to the right shoulder and arm, and this continued to be noticed at intervals until six months ago, when he began to be troubled with shortness of breath and complained of a paroxysmal cough and difficulty in swallowing; at this time he noticed a swelling above and a little to the right of the sternum.

From this time he suffered much from the symptoms above described, and had also great difficulty in sleeping in the recumbent position and spent a large portion of his nights in the sitting posture. The patient had never had syphilis, and the only thing to which he could attribute his present condition was a severe fall upon the right shoulder which had occurred two years previously.

The result of the examination by Prof. Pepper was as follows: The patient presented a swelling above the sternum extending from the middle line two inches to the right along the line of the clavicle. Inspection showed decided pulsation in the swelling and palpation revealed its expansile character. Auscultation detected no bruit or thrill in the tumor, but the heart sounds were heard over the area of swelling with great clearness; no murmur was detected over the right carotid or subclavian arteries; examination of the heart showed that its sounds were clear. There was noticed great venous suffusion of the face with distension of the venous trunks when the patient leaned forward. The left pupil was large, the right of moderate size; the right pupil promptly responded to light, the left one acted sluggishly. The radial and other accessible arteries were soft to the feel, so that there was no evidence of widespread arterial disease. A sphygmographic tracing taken by Dr. Westcott, showing the differences in the radial pulses, is subjoined. As the result of his examination, Prof. Pepper was of the opinion that the patient was suffering from an aneurism of the innominate artery.

The case was referred to Prof. Ashhurst and was admitted to the surgical ward. Prof. Ashhurst, after a careful examination of the patient, concurred as to the diagnosis of innominate aneurism and decided that the treatment by simultaneous distal ligature of the right common carotid and right subclavian arteries was that which offered the most hope of a cure of the aneurism or at least of benefiting the patient's condition.

On November 13, one week after his admission to the hospital, the patient was etherized and Prof. Ashhurst cut down upon and ligated the right common carotid artery just above the omohyoid muscle with a catgut ligature; the right subclavian artery was next exposed and ligated in its third part just outside the anterior scalene muscle with a ligature of the same material. The wounds were closed with silver sutures, drainage tubes being introduced, and were dressed with oiled lint, the whole right arm being wrapped in cotton.

No immediate effect was noticed in the aneurism from the application of the ligature, nor were there any cerebral symptoms. The patient did well after the operation, and on the succeeding day the temperature and color of the right arm were good. The wounds did well and in the course of a few days it was noticed that the tumor at the root of the neck had become smaller and firmer and that its pulsations had diminished in force; the dyspnœa and dysphagia had also diminished very markedly, and the patient was able to sleep comfortably in the recumbent posture. Up to the time of his discharge from the hospital repeated examinations failed to discover any pulsation in the radial artery. After this time the patient's improvement was continuous and he

was discharged from the hospital on January 13, just two months after the operation, at which time he was examined by Prof. Osler, who made the following report:

Inspection shows no pulsation visible; right sterno-clavicular articulation prominent. Palpation reveals systolic shock at right sterno-clavicular articulation and upon firm pressure a feeble pulsation can be felt; this is also noticeable when the finger is placed in the sternal notch. Percussion gives a clear sound beneath the first bone of the sternum until you approach close to the clavicle. There is a small area of dulness beneath area of prominence. Examination of the heart shows the apex beat visible just below the nipple; feeble cardiac pulsation felt on deep pressure. No increase of heart dulness; heart sounds clear at apex; at second right interspace, first sound feeble, second sound loud and ringing. Accentuated sound over first bone of sternum. Over the swelling at the right clavicular articulation, first sound is dull, free from murmur, and the second sound is loud. The accentuation of the second sound is heard as far as the middle of the right clavicle; most careful examination fails to discover any indication of murmur.

The treatment of innominate aneurism by the consecutive or simultaneous application of distal ligature to the right common carotid and subclavian arteries has been employed in a sufficient number of cases, and the results following the operation have been of such a nature that it is now established as a well-recognized surgical procedure in the treatment of this affection.

The *rationale* of the treatment of innominate aneurism by the distal ligation of the right common carotid and subclavian arteries are as follows: By the occlusion of the right common carotid and subclavian arteries, if both be tied simultaneously, the amount of blood passing through the aneurismal sac is diminished about two-thirds, and there is a proportionate slowing of the circulation of the blood through the sac; the circulation continuing through the aneurism is, probably, about one third of the usual amount, representing the blood sent to the large branches given off from the first part of the subclavian. By means of this diminished and retarded circulation we have, in favorable cases, consolidation, to a greater or less extent, of the aneurism, either from the formation of a laminated clot on the inner wall of the sac, or from the extension backward of a thrombus which starts at the site of the distal ligatures upon the carotid or subclavian arteries.

If the ligatures be applied consecutively to the carotid or subclavian arteries, the circulation of the blood current through the aneurismal sac is diminished to a less degree upon the application of the first ligature. In cases which terminate favorably after this operation the aneurismal tumor diminishes in size and becomes firmer, the pulsation becomes less distinct, and the pain and pressure symptoms, if they had previously existed, disappear; that pulsation at the site of the aneurism is seldom entirely wanting is accounted for by the fact that a certain amount of blood still finds its way through the sac to supply the vessels given off from the first part of the subclavian.

The question as to whether it is better to practise simultaneous or consecutive ligation of the carotid and subclavian arteries in this form of aneurism, is one upon which the highest surgical authorities hold some diversity of opinion. Mr. Barwell, whose successful cases and writings upon this subject have given a great impetus to the treatment of innominate aneurism by distal ligature, is of the opinion that the most rational form of treatment consists in the application of simultaneous distal ligatures to the carotid and subclavian arteries in properly selected cases. He opposes the application of consecutive ligatures unless in exceptional cases; and in this opinion he is sustained by Mr. Erichsen, on the ground that by tying one vessel only, time is allowed for the gradual dilatation of the collateral vessels given off from the first part of the subclavian artery, thus rendering the application of the second ligature less effective in diminishing the amount of blood passing through the aneurismal sac. He concludes that the result of tying the right carotid artery alone for innominate aneurism is not satisfactory, as this vessel has been ligated for innominate or aorto-innominate aneurism thirty times, with twenty deaths; and in case of aortic or aorto-innominate disease it has been tied seven times, and in only one instance has it proved beneficial; he concludes, therefore, that in low innominate aneurism, which almost always involves, to a certain extent, the aorta, it is safer to tie simultaneously the carotid and subclavian arteries than to tie the carotid alone.

Mr. Holmes, upon the other hand, looks with more favor upon the consecutive application of the ligatures; he considers the carotid ligature most important, and recommends its application first, and reserves the ligation of the subclavian for a subsequent period. He is in favor of ligating first the vessel in the direction in which the aneurism exhibits the greatest tendency to spread. He also believes that the distal ligature is efficacious in the treatment of innominate aneurism which is of the mixed variety, which is associated with marked aortic disease; in this opinion controverting the previous teaching that innominate aneurisms associated with aortic disease are unfavorable cases for distal ligation. In this latter opinion he is supported by the favorable results following the ligation of the left carotid artery for aortic aneurism, as suggested by Mr. Cockle.

So far as I am able to ascertain, consecutive double distal ligation of the right carotid and subclavian arteries has been practised for innominate aneurism (as diagnosed) in eight cases, with three recoveries and five deaths, although there was temporary relief in one of the fatal cases.

I have been able to find the records of thirty-two cases of simultaneous double distal ligation of the right carotid and subclavian arteries for innominate aneurism (as diagnosed), in which the operation was followed by recovery in twelve cases, death in sixteen cases, and by temporary improvement in four cases. It will be seen that the results of both methods of treatment as regards the number of recoveries are nearly equal, but it must be remembered that the number of cases in which consecutive liga

tion was resorted to is very small in comparison with that in which simultaneous ligation was employed. I think, therefore, that at the present time the weight of surgical opinion is in favor of the views of Mr. Barwell that, in innominate aneurism, the simultaneous double distal ligation of the right carotid and subclavian arteries is both a more efficient and safer procedure than the consecutive ligation of these vessels.

MOUTH BREATHING AND ITS TREATMENT.

BY N. R. GORDON, M.D.,
OF SPRINGFIELD, ILLS.

The evil results of mouth breathing, are due to the inspiration of atmosphere at a low temperature, the presence of dust and foreign matter in the air, the desiccating effect on the mucous membrane over which the air passes, and the disuse of the nasal passages for the normal function of respiration.

The pathological results are; chronic inflammation of the pharynx, larynx, and bronchi, and the adjacent tissues, accompanied with cough, hoarseness, loss of resonance of voice, impairment of sense of smell, and hearing. The pernicious effect of oral respiration is not impressed upon the minds of medical men, nor is it scarcely recognized as being an evil practice by the public. The practice is a very common one, especially during the winter season; there are a great many habitual mouth breathers.

A condition which gives rise to partial or complete nasal stenosis, is adequate cause for mouth breathing. Chronic hypertrophic catarrh is the most frequent cause of partial stenosis; the frequent congestion of the cavernous tissue from repeated colds, causes hypertrophy of the turbinate bodies, which partly close the nasal lumen, requiring the subject to resort to oral respiration; the necessity for mouth breathing is in proportion to the nasal stenosis; the transition from nose breathing to mouth breathing is gradual, and the parts by degrees become accustomed to the transfer of function. Many persons have a partial obstruction of the nasal passages; they breathe with comparative ease while in a state of repose, but upon taking exercise, such as walking, they resort to mouth breathing to supplement the deficiency in the nose; others resort to it only during sleep; many contract mouth breathing from a careless habit, or possibly from a succession of colds in which the subject is forced to breathe through the mouth; in such cases the obstruction in the nose is the result of thickened mucosa.

A deflection of the septum to one side or the other, will produce a partial obstruction of the nares; the septum may be contorted like the letter S, giving a stenotic effect in each nostril; often coupled with deflection there is hypertrophy of the opposite tissues, making the stenosis complete. Any of the tumors that occur in the nasal cavity, such as the gelatinous, or mucous polypi, malignant growths, the adenoid growths of the post nasal passage, or exostosis of vomer may produce partial or complete stenosis of the nares; foreign bodies, such as seeds, buttons, stones, may lodge in the meati, and occlude the passage; paralysis of the dilator alae nasi prevent free nasal respirations; enlarged tonsils, tumors of the palate or uvula may interfere with nose breathing. Adhesions of the soft palate to the posterior wall of pharynx, and bands uniting the two lateral walls of the nostrils, the result of cicatricial contraction from strumous or syphilitic ulceration, will prevent nasal breathing.

The function of the nose is of a three-fold character: 1. Respiration. 2. Special sense of smell. 3. Vocal resonance. The temperature of the air, in its passage through the nose, is increased, and foreign substances, such as dust, is lodged on the irregular mucus surface of the nasal passages. If the inspired air is dry, it also gathers moisture. The terminal filament of the olfactory nerve are very properly distributed to the superior portion of the nasal passages, where it readily comes in contact with the odor-bearing atmosphere. In order that the vocal resonance should be perfect, the nasal and post-nasal passages should be free and open; any increase in tissue or obstruction in these passages impair the resonance of the voice.

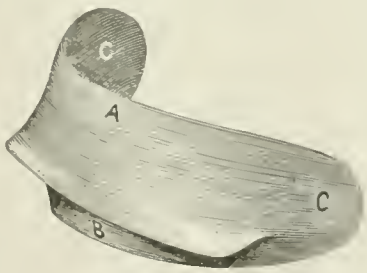
In oral respiration the air enters the larynx at a temperature somewhat lower than is given it by a passage through the nasal chambers; this cold air excites inflammatory action, producing soreness, cough, hoarseness and other symptoms of pharyngeal, laryngeal, and bronchial irritation. The dust and foreign matter floating in the air finds but little to impede its progress until coming in contact with the vocal bands, and the adjacent sensitive tissues, thus adding another factor, in the production of inflammation. Owing to the dryness of the atmosphere in our dwellings, the mucus membrane of the mouth and throat, in its efforts to furnish the required additional moisture, becomes very dry and parched. Infiltration with thickening of the mucus, submucus, and glandular tissue, of the entire nasal and post-nasal passages occur, as the result of deprivation of the normal stimulus, afforded by respiration; such thickening interferes with the resonance of the voice, hearing, and sense of smell. The results arising from the loss of nasal breathing, are as important as the direct evils from mouth breathing.

Treatment.—The method of treatment adapted for the cure of mouth breathing will depend upon the cause. If the obstruction is due to deflection of septum, I have found the rotating burr and dental engine, the most practical and satisfactory method of relieving the difficulty. Exostosis can be removed in the same way. Abnormal growths of whatsoever character, must be removed by such means as seem best adapted to the various conditions existing in each particular case. The adhesions of the soft palate with the posterior wall of pharynx, should be dealt with in the most approved method for relieving such conditions; adhesions of the nasal walls should be severed, and pledgets of cotton kept in situ until the part heal. If the nasal stenosis is due to indurated hypertrophy of the turbinate processes, these will require removal by the galvanic cautery or Jarvis' wire snare.

So far as the successful treatment of the habit of mouth breathing is concerned, I am unable to find anything in the literature upon the subject, better than the use of bandages, or similar appliances, around the head for holding the mouth closed, which are unsatisfactory and produce great discomfort to the patient. The frequency of mouth breathing and the evil consequences, are sufficient to enlist our attention in the prevention and cure of this practice. As we have said, the greater number of cases of mouth breathing are due to nasal catarrh; a succession of colds have produced a soft and œdematous condition of the nasal mucosa, and mouth breathing ensues as a necessity; upon recovery or partial subsidence of the cold, the subject continues to breathe through the mouth, and the conditions which characterize chronic hypertrophic catarrh are developed.

In all such cases, and indeed, in all others where the obstruction is not indurated, fixed, or complete, and in cases after an operation for the relief of stenosis, where it is desirable for the patient to overcome the habit of mouth breathing while asleep, I have found an instrument, the device of Mr. William Fisher, of this place, to be admirably adapted for their relief. It is made of celluloid, simple in construction, and fits nicely between the teeth and lips without the aid of bandages or other appliances, and is worn during sleep without any apparent discomfort. I wish to call especial attention to the value of this instrument in the treatment of mouth breathing, due to the above causes; it is also a useful adjunct in the treatment of nasal disease where mouth breathing is present. It acts by actual prevention of oral breathing, and the normal stimulus of respiration restores the intra-nasal tissues to a healthy condition. It also overcomes the habit of snoring, which is due to ora-nasal respiration.

The accompanying cut gives a very good idea of the instrument.



THE RESTORATIVE TREATMENT OF SLEEPLESSNESS FROM BRAIN EXHAUSTION.

BY BOARDMAN REED, M.D.,

OF ATLANTIC CITY, N. J.,

FORMERLY PHYSICIAN TO THE MERCER MEMORIAL HOUSE FOR INVALID WOMEN

One of the lessons strongly impressed upon me by my experience in practice is that insomnia when due (as is most frequently the case) to brain exhaustion, is best cured by tonic or restorative treatment, rather than by narcotics. It has been a source of gratification, therefore, to see the same lesson strongly inculcated by Dr. W. G. Eggleston in THE JOURNAL for February 19. I desire to confirm emphatically all that he said in his paper.

It has been alleged by somebody that man is the only animal that can be taught to sleep on an empty stomach. But when suffering from brain-fag this teaching may fail even in man. Unquestionably a lunch at bedtime is wholesome and conducive to sleep, especially in brain workers who sup early and retire late. But the lunch should be simple. Indigestible food taken at bedtime may easily disturb the sleep.

The cold plunge or sponge-bath is another excellent hypnotic and a rational one, since it at the same time diverts blood from the brain to the capillaries of the surface and invigorates the nervous system.

At this health resort, where many of the broken down people of the United States sooner or later come as to a sort of Mecca for the afflicted. I see large numbers of persons whose chief complaint is that they cannot sleep. Most of them have taken bromides persistently and often without advantage except at first. When such patients come with definite instructions from their physicians to persevere with a course of some bromide mixture, I have always encouraged them to give the remedy a thorough trial, but when the cause of the insomnia has been, as it is nine cases out of ten, some form of cerebrasthenia, the result has generally been disappointing, even in this air which is exceptionally bracing and predisposes most persons to sleep.

The cases of nervous break-down which are serious enough to have caused a compulsory vacation from business and a sojourn here at the seashore, frequently require medical treatment to reëstablish the habit of sleeping, and thus enable the exhausted nerve centres to be rested and reinvigorated; and no sedative or narcotic drug yet tried by me, whether opium, chloral, the bromides, hyoscyamous, hyoscine or paraldehyde has proved satisfactory in such cases. The tonic effect of the sea air with good food, moderate exercise and cheerful company often prove sufficient. When it does not, a light lunch at bedtime with occasionally a few teaspoonsful of whisky in milk added and the sponging of the body with sea-water followed by a thorough rubbing with a Turkish towel are highly useful measures. But sometimes these all fail, and when they do, my experience teaches that to begin administering any narcotic medicine is usually a mistake. My most frequent recourse now is to give some one of the nutrient nerve tonics, such as the compound syrup or glycerite of the hypophosphites—a teaspoonful two or three times a day—or in some cases the compound syrup of the phosphates, commonly known, in Philadelphia at least, as Parish's Chemical Food. When the patient has a weak heart and insomnia results from a passive congestion of the brain, a condition frequently met with among neurasthenics, a little digitalis may work wonders and may usually be advantageously combined with very small doses of strychnia and quinine as well as with moderate doses of iron when this is otherwise indicated.

Of course it goes without saying that bad sleepers should have their stomachs and liver put in as good order as possible, and when kidney or other organic diseases has a causative influence it demands the chief attention.

There will remain, then, a certain proportion of cases in which drug treatment of all kinds has been tried and failed, and continues to fail even when tried again under the better conditions existing with rest and good hygiene in this invigorating seaside climate. When such patients fail to sleep and are driven almost insane for want of sleep, it is impossible to deny them a trial with narcotics. Yet I have seen an overtaxed journalist take astonishing doses of morphia besides really dangerous amounts of chloral and hydro-bromate of hyoscine without getting more than an hour or two of sleep and then sleep soundly after one or two treatments by the continued galvanic current from eight to fifteen cells passed directly through the brain. This was an exceptional case, but it is a constant experience with me to see electricity in some of its forms prove of the utmost value in cases of insomnia as well as in all the other forms or manifestations of nervous exhaustion. Massage is another promising auxiliary.

If these few hastily recorded results of a considerable experience with insomnia serve to help physicians who are not satisfied with the effects of the so called hypnotic drugs, my object will have been achieved. Nerve tonics are often the best hypnotics. At my last visit, this evening, a puerperal woman who had been sleeping badly, said to me, "You put some quieting medicine in that last mixture." It was simply compound syrup of the phosphates.

Atlantic City, N. J., March 1, 1887.

MEDICAL PROGRESS.

The Toxicity of the Cholera Bacilli and the Treatment of Cholera.—Much in the course of cholera, especially in foudryante cases, points to the toxic action of the bacilli. The poison may be derived from the vegetative activity of the comma bacilli, may be a ptomaine that has been formed in the intestinal canal, or it may be secreted by the bacilli, or the bacilli in themselves may be poisonous, those that have perished in the intestinal canal being digested and acting in the manner of poisonous mushrooms. To determine upon what this toxic action depended Cantani, of Naples, by boiling sterilized a three-days pure culture of comma bacilli and injected it into the peritoneum and the subcutaneous tissue of dogs. The animals sickened with symptoms of cholera and recovered in twenty-four hours. Control injections of sterilized meat-broth gave negative results. The older the culture the less poisonous was its action. Cultures of living bacilli gave negative or almost negative results. Living cultures in *simple* meat-broth were almost without effect, while living cultures in *peptonized* broth gave rise to violent symptoms of cholera intoxication. Cantani thinks he can explain the latter observation by the luxuriant growth and the early death of the bacilli in peptonized broth, while in simple broth their growth is slow and their vitality is retained a much longer time. Cantani draws these conclusions from his experiments: 1. There is a cholera poison which is dependent on the comma bacilli. 2. The cholera poison is independent of the living bacilli found in the intestinal canal. 3. The dead bacilli yield more poison to the fluids in which they have lived than do the living bacilli. Cantani is of the opinion that the comma bacilli are in themselves poisonous, like the poisonous mushrooms. There are two indications for the treatment of cholera: to limit the multiplication of the bacilli in the intestinal canal, and to hasten the excretion of the poison from the blood. The fact that tanners escape cholera, directed Cantani's attention to tannic acid. He had constructed many years ago an enteroclysma, consisting of an irrigator holding 3 or more litres, hung up 2, 3 or 4 metres above the bed of the patient and terminating in an intestinal tube. With this apparatus he can overcome the ileo-cœcal valve in the majority of cases, and, as he has demonstrated by many experiments, also the pylorus, for infusion of senna, etc., injected by the apparatus, is vomited after fifteen to thirty minutes. In cholera he injects, by means of the irrigator, 3, 5 or 10 grams of tannic acid in 1½ to 2 litres of sterilized water of a temperature of 38, 39, or even 40° C., with 30 to 50 grams of gum arabic and 10 to 30 drops of laudanum. Prof. Maragliano, of Genoa, has employed with great success as much as 20 grams of tannic acid. The results were astonishing. After every enteroclysis the discharge ceased for six, eight or twelve hours. The sooner the treatment was begun the better results were obtained. After the cholera diarrhœa had lasted a number of days the symptoms of cholera intoxication could no longer be forestalled, though even then they were much milder. And in the premonitory diarrhœa, he had obtained the impression that the disease had frequently been aborted.

A few moments after the enteroclysis the patient goes to stool and voids one-third to one-half of the injected fluid. The injection should be made shortly after a passage, so that it may be retained as long as possible in the small intestine. Usually no more than two to six injections are required a day. Cantani states that during the Naples epidemic he was sanitary inspector to the orphan asylum for children whose parents had died with cholera. During the first weeks as many as six cholera cases developed a day which had to be taken to the cholera hospital. He then began to inject the hot tannic solution as soon as diarrhœa began to appear, and from this time, of several hundreds of orphans admitted to the institution, he had seventy-six cases of mild and thirty-two cases of severe diarrhœa (fifteen with vomiting) which, from the genius epidemicus, must be ascribed to cholera infection, and in none of them did the specific symptoms of cholera declare themselves. This method has gained great popularity among the profession and the people of Italy. Tannic acid in 1 per cent. solution of 37° C. destroys the bacilli, and in ½ per cent. solution prevents their further development. The stimulating and the vivi-

fying effects of the hot injections are of great importance in this treatment.

No method of treatment fulfils better the second indication, to hasten the excretion of the cholera poison from the system, than does hypodermoclysis of hot saline solution. Cantani employs in the algid stage ½ to 1 litre of sterilized water at a temperature of 38 to 39° C., in which 4 per cent. of sodium chloride and 3 per cent. of sodium carbonate have been dissolved. Of 187 most desperate cases, that had been given up, he was able to save 60 per cent., while the mortality for this class of cases, according to Griesinger, is 80 per cent.; a reduction of the death-rate one-half. Hypodermoclysis is borne well. Even in the cases that finally succumb to cholera typhoid the temporary good results are astonishing. The injections are best used in the sides of the abdomen below the costal arches, where the skin can be most easily pricked open and the solution is rapidly absorbed.

In conclusion, Cantani recommends the tannic enteroclysis as a prophylactic during the prevalence of cholera epidemics. The chief of the cholera hospital in Buda-Pest has adopted Cantani's method, and from it alone has obtained positive results in the treatment of cholera.—*St. Petersb. Med. Wochenschr.*, No. 52, 1886.

Terpine in the Treatment of Neuralgia.—Dr. Ducroux, in a paper recently read before the Société Médico-pratique, described some cases showing the good effects of terpine in neuralgia. The first was that of a woman, aged 47. Two years before, she had been attacked with neuralgia, consequent on occupying a damp house. Sulphate of quinine, and afterwards aconitine, gave temporary relief. On February 15, 1886, she was suffering from constant neuralgia on the right side of the lower jaw, in the right cheek and temple. There was also pain in the supra-orbital notch, the mental foramen, and in the occiput. The patient complained of a constant feeling of heaviness in the head, and of cold in right side of head. Terpine (.60 centigramme) was given in three pills between meals, during three days. On February 19, considerable relief was obtained. The pains and the feeling of cold had disappeared, and also the heaviness of head, which had persisted for two years. The pains having returned in a few days, terpine was again administered in the same manner on February 25. The pains ceased, then recommenced, but in a milder form, and without any heaviness of the head. Terpine was again given on March 8. Neuralgia having again come on, doses of .80 centigramme were administered in four pills, beginning on March 16, and being continued for three days. During the month of April, these doses were repeated at intervals. At the end of that month, the back of the head was still sensitive, but all other pains had ceased. At the beginning of May and June, terpine was again administered, the pains having reappeared. On June 15, the patient was able to go out without extra covering on the head. Dr. Ducroux is of opinion that the patient may be again obliged to have recourse to terpine, as the neuralgia shows a tendency to recur, though in a milder form. The therapeutic effect of the terpine seems to cease after a few days. In cases of obstinate neuralgia, it might be advisable to give it for three days every week. The second case was that of a married woman, aged 35. At the age of 22 she had intermittent fever. From the age of 13 or 14, she had suffered from headache from time to time, and when she was 22 she had intermittent fever. Menstruation had ceased for six years. A week ago she was attacked with pain in the right side of the head differing from her habitual headache. This pain, which gradually increased, extended in front, around the ear, and over the temple and cheek, and behind, over the mastoid region. There was also pain in the external auditory meatus. The pains were accompanied by a humming in the ears. Terpine (.60 centigramme) was given in three pills, to be taken between meals. On April 29, the pains had disappeared, but the humming in the ears continued; .50 centigramme of sulphate of quinine was administered during three days. This had no effect. A few days before May 17, the humming in the ears diminished, and took a different form. The sound in the ears was no longer that of humming but of running water. The patient could neither hear herself nor others speak. Terpine was again administered in the same way. The sounds in the ears diminished and completely disappeared two or three days after the last dose. Dr. Ducroux believes that the disappearance of the pains was due to the use of terpine, and that it had some effect upon the sounds in the ears. The third case was that of a man aged 23. Fifteen years before he had suffered from bronchitis, with hæmoptysis. In May, 1885, he was attacked with severe pain over the right eye, in the supra-orbital notch, and about the occiput. A blister was applied to the temple, and dressed with 1 centigramme of morphine; terpine (.60 centigramme) was given in the way already described. The first morphine dressing did not relieve the pain, but the second, applied the following evening, was more effectual. The patient had then taken three terpine pills. As the improvement continued, only eight pills were administered in the three days following the second day. The neuralgia was completely cured. Dr. Ducroux attributes this result to terpine, as the morphine application produced no effect.—*British Medical Journal*, Jan. 8, 1887.

Schede's Method of Dressing Wounds.—Professor Mikulicz communicates to the *Przeglad Lekarski* an account of fifty cases of surgical operations which were treated by the method recommended by Dr. Schede at the last Surgical Congress in Berlin—viz., to allow blood to fill the wound, and to lie between the lips after they are brought together, any deficiency in the quantity of blood being remedied by the use of the knife, the idea being that the blood either actually becomes organized or serves as a protection for the granulations as they are formed. The wound is covered with protective, to prevent evaporation. Professor Mikulicz's observations included six resections of joints, four amputa-

tions, six dissections, two ligatures of arteries, seven extirpations of large tumors, etc. In thirty-six of the fifty cases union took place without suppuration, in four there was extensive formation of pus, in five superficial suppuration starting from the points of suture, and in the remaining cases pus had existed previously to the operation, and the disinfection at the time not having been complete, it continued subsequently. The general condition of the patients was highly satisfactory, even in those cases where suppuration occurred, the temperature in no case rising much beyond normal. The dressings were not removed or changed for at least a fortnight, sometimes not for a month. This appears to be of great advantage in the case of bone and joint operations, where complete immobility of the parts is a desideratum. Other specified advantages attributed to this plan are that wounds attended with a loss of substance rapidly fill up, and the cicatrices that form are peculiarly soft and smooth. Professor Mikulicz does not find, as Schede did, that the existence of silver sutures in osseous lesions has any unfavorable influence on the cicatrization of the wound. He remarks that it is important not to bind the external dressings too tightly to the wound.—*Lancet*, March 19, 1887.

"Dead Space" in Certain Chemical Reactions.—The most important discovery now spoken of in Berlin medical society is that of Prof. Liebreich, who only a year ago presented us with the new basis for ointments. His latest discovery is more in the sphere of pure chemistry, but it is also interesting to physicians. Professor Leibreich observed that when reaction takes place only some time after mixing certain liquids together, it does not occur throughout the whole liquid; in some parts a space is left, in which no reaction is seen, and this he calls the "dead space." He has observed the same in several reactions—for instance, on mingling sulphuric acid, iodic acid, and starch together, or hydrate of chloral with carbonate of sodium, or chloride of gold, sodium lye and sugar, and in many other cases. The so-called "dead space" is not always the same, but varies according to the kind of vessels into which the liquids are poured. If, for instance, narrow tubes are used, the "dead space" is very small, while in capillary tubes no reaction whatever takes place. If the liquids are poured into closed vessels with rigid sides, the "dead space" cannot be seen, but if the closed vessels are of membranous structure, it may be observed. Thus, for instance, in a prepared rabbit's bladder the "dead space" is at the top and bottom, whilst the reaction takes place in the middle in the shape of the yolk of an egg. If a piece of gut is taken and divided by means of little rings into a number of small compartments, and if one of the above-mentioned liquids is poured into it, in each of the compartments the reaction is seen taking place in the middle, while at the top and bottom there is a "dead space." As the "dead space" depends upon the size of the vessel, it may be inferred that for every chemical mixture yielding a reaction, proportions can be imagined in which reaction ceases. The laws of reaction, therefore, are dependent on the space in which the effect takes place, and hence, these observations have an important bearing on the organism. In testing the effect of certain medicinal agents, not only must their chemical constitution be taken into account, but the laws governing their reaction in large and small spaces respectively.—*British Medical Journal*, January 8, 1887.

Adonis Vernalis in Heart Disease.—Dr. J. G. Herrmann, of St. Louis, writes that he has recently had considerable experience with the use of adonis vernalis in cardiac affections. He believes that his experience, which has extended over ten months, warrants his statement that, while free from the evil effects of digitalis, infusions of adonis vernalis are quite as efficacious as that drug. He prescribes it in the form of an infusion, of the strength of three drachms of the herb to six ounces; of this he gives a tablespoonful every two hours. He refers to several cases in which this drug proved successful even after digitalis had failed. One was a case in which the feet were highly œdematous, and there was general anasarca from heart lesion. In two weeks of treatment with the infusion of adonis vernalis every two hours, in tablespoonful doses, almost perfect relief was secured. So also he states that he has caused great relief to a case of ascites, produced through heart disease. He noticed that it increased the fulness of the pulse and strengthened the cardiac pulsation. In asthma also he has combined it with quebracho with very satisfactory results.

The following are some of the prescriptions which he has employed:

℞ Fl. ext. adonis vernalis.
Sig.—From 2 to 6 drops, as necessary.

℞ Fl. ext. adon. vernal. ..... ℥ ss
Syr. menth. pip. ..... ℥ vi
Combined as desired sometimes with brom. sodium and tr. opii camph.
Sig.—℥i to ℥i every two hours daily.

In asthma:

℞ Fl. ext. adonis vernalis. ..... ℥ss
Fl. ext. quebracho ..... ℥ii
Tr. opii camph. ..... ℥ii
Syr. menth. pip. ..... ℥vi ℳ
Sig.—℥i every two hours.

—*Therapeutic Gazette*, March 15, 1884.

The Aniline Treatment of Phthisis.—Dr. Kremianski's idea of curing tuberculosis by converting the blood into a dilute solution of aniline has been tried by Dr. Nesteroff on a patient who was about to be sent to the south, with the result that he became rapidly worse and died in a fortnight. The Moscow Medical Society, before whom the matter was brought were nearly unanimous in the opinion that the aniline treatment would be not merely useless, but positively dangerous.—*Lancet*, April 2, 1887.

"Black Drop" and Carbolic Acid in Painful Emesis.—Pecholier uses liquified carbolic acid ℥ij, acetum opii ℥vj, gtt. 4 in sweetened water t. i. d. five or ten minutes before meals.—*Therap. Monatshefte*, March, 1887.

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PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, APRIL 23, 1887.

A NEW PATHOLOGY OF PREGNANCY.

In the March and April numbers of the *American Journal of Obstetrics*, may be found a most interesting article by DR. A. F. A. KING, of Washington, entitled "A New Explanation of the Renal Troubles, Eclampsia, and other Pathological Phenomena of Pregnancy and Labor." The purpose of the paper is to present a new explanation (as the author thinks) of the etiological relation between pregnancy and the nephritic derangements that so often attend it; though the paper does not deal with renal difficulties alone, but other correlative pathological states also.

Passing over the preliminary discussion, though it is interesting, we come to the following brief statement of the theory: Disturbances in the renal circulation and renal functions are produced chiefly by pressure of the gravid uterus upon the abdominal aorta or its branches, or upon the vena cava or its branches, or upon both or all of these, *in consequence of the child and womb not maintaining during pregnancy their normal lateral obliquity above the pelvic brim.* This, says Dr. King, is the pith of the whole matter. Before going further, however, it is necessary to define what is meant by the *normal attitude of the child in utero during pregnancy, before labor begins*, and the *normal position of the gravid uterus*. In regard to the first, it must be understood that it does not refer to the attitude or presentation of the child during labor, but during pregnancy before labor begins. He defines this attitude as follows: The normal "presentation" and "position" of the fœtus *in utero* during pregnancy, before labor begins, is the dorso-anterior position of an oblique presentation (commonly known as a transverse presentation). A head presentation (presentation of the head towards the centre of the canal of the pelvis and os uteri, with the long axis of the child parallel with the axis of the plane of the pelvic brim) is therefore abnormal.

The normal position of the gravid uterus is thus defined: The normal position of the gravid uterus, *in abdomine*, during the later months of pregnancy, before labor begins, is the lateral oblique position corresponding, more or less, with the oblique position of the child; the fundus uteri, maintaining the pelvic extremity of the fœtus, being usually directed towards the right side (exceptionally to the left) of the lumbar vertebræ. This definition of course, applies to the position of the uterus as shown by abdominal palpation, the apparent position being partly due to the shape of the uterus as it conforms to the shape of its contents; vaginal examination will show that the os and cervix have little or no deviation from the median line, while the fundus is towards one side of the woman's spine.

Having stated that the renal troubles, etc., are produced in consequence of the child and womb not retaining (or maintaining) their normal lateral obliquity *above the pelvic brim*, Dr. King now draws a contrast between the abdominal and pelvic cavities. The womb and child having risen, after the fifth month, from the pelvic to the abdominal cavity, "in the latter they should remain until the advent of labor. The pelvic canal, in so far as it is concerned with reproduction after this period of gestation, is simply, or chiefly, the channel of exit, and no part of the child should again enter here until it is ready to go out and be born." It should remain entirely within the abdominal cavity until the time of labor. This leads to a remark that may astonish many obstetricians, but which, though lacking in direct proof, is certainly in accord with reason: normal reproduction is the same in primiparæ as in multiparæ. That is to say, under *normal* conditions, there is no reason why in multiparæ the head of the child should rest during pregnancy upon one of the iliac fossæ, and in primiparæ should descend into the pelvic cavity three months before full term; if such be the case, why do obstetricians teach that descent into the pelvic cavity is (*not* the first, but) the second stage in the mechanism of labor? Can it be, asks Dr. King, that this second step in the mechanism of labor *normally* occurs in primiparæ three months before it is time for labor to begin? He therefore believes that the oblique presentation, with the lower end of the fœtus resting upon an iliac fossa, is normal for primiparæ as well as multiparæ.

If what Dr. King calls the "normal obliquity" of the womb and child be maintained during pregnancy, there will be no injurious compression on any blood-vessels, with the usual dorso-anterior position of the child. The long axis of the child, when thus obliquely placed, explains Dr. King, will occupy a *trebly* complex diagonal position: oblique to the horizon, the breech being higher than the head; oblique laterally, the breech to the right, the head to the left; and oblique antero-posteriorly, the head more in front, the breech more behind. With this position there is space posteriorly for the projecting lumbar vertebræ and the large vessels placed upon them. So also, the lower part of the gravid uterus, containing the fœtal head, resting upon the psoas and iliacus muscles in the iliac fossa, will, on account of the downward and forward inclination of this base, tend to glide forwards, away from the left side of the spine, away from the large vessels. In this position there is most economy of space. But with the womb and fœtus in a vertical position, that is, with their long axis in line with the axis of the plane of the pelvic brim, there is no economy of space; they are crowded by their abdominal surroundings, the crowding being towards the lumbar vertebræ and the large blood-vessels.

We now come to the question, will pressure of the gravid womb upon the aorta, vena cava, and their branches produce renal trouble? and we may answer this affirmatively without discussion. To this we may add the effect of compression of the ureters upon the kidney, for admitting either one by no means excludes the other; in fact, it is more than likely that a body compressing one will compress the other at the same time. Now, when the head presents during pregnancy at the brim, and descends into it three months before full term, all neighboring canals, whether arteries, veins, ureters, or lymphatics, may receive disastrous pressure and interference with the transit of their contents. Aortic and vena-caval compression during pregnancy and labor are easily diagnosticated. As a point of exclusive diagnosis of the former Dr. King gives feeling the pulsation of the femoral arteries below Poupart's ligament. In twenty-one pregnant women examined in this way the femoral pulses could be easily felt, and appeared to possess their normal tension, but in none of these women was there any abnormal tension of the radial pulse, nor any albuminuria or other indication of renal derangement.

Having proceeded thus far, Dr. King hopes to show that eclampsia during pregnancy and labor, the several kinds of cases and their alleged preceding pathological states, may be traced back to malposition of the child-presentation of one end of the fœtal ovoid instead of an oblique presentation. As to the cases with albuminuria, nephritis and uræmia, we know that renal trouble is the prime cause; but as regards the cases explicable upon the "uterine irritation" theory of Tyler Smith, we must account for this abnormal irritation of the uterine nerves. It certainly is not physiological; "and with our hitherto prevalent notions of what constitutes normal pregnancy, the occurrence of eclampsia from uterine irritation before labor begins is the more difficult. When, however, we have decided that conditions hitherto called normal are really abnormal, the matter becomes more easy. I therefore beg to maintain that premature obliteration of the cervix uteri, premature distension of the cervical canal and lower uterine segment, with thinning of its muscular wall, and tearing of its decidua; and the premature descent of the lower end of the fœtal ovoid below the pelvic brim;" all due to a want of the lateral obliquity of the fœtus during pregnancy, "are amply sufficient to account for the uterine irritation. Whether the convulsions be due to uræmic intoxication, to uterine irritation, to cerebral hyperæmia, or to reflex local irritation in other viscera, or to several of these coincidently, they may all be accounted for by pressure of the gravid womb and child, when the normal obliquity of the latter is wanting."

The causes of the disturbance of the normal lateral obliquity of the womb and child, and of their premature descent below the pelvic brim, especially in primiparæ, are, according to Dr. King, dress, corsets, coitus, and certain abnormal postures. It would certainly add materially to our knowledge of the influence of these factors could a study of pregnancy be made among those nations whose only clothing is the atmosphere.

We now come to a question which must be more correctly answered in the future than is now possible: Do convulsions, nephritis, etc., occur in cases of "transverse" presentation during labor, and in most of which cases the child was, it may be presumed, oblique and wholly above the pelvic brim during pregnancy? In discussing the "obstetric treatment" of eclampsia authors refer almost exclusively to head presentations. In regard to "obstetric indications" in transverse presentations they are silent; and we may conclude, though not with certainty, that such cases are rarely or never met with. It is interesting to note that Schauta has found that in 315 cases of eclampsia (in 134,345 deliveries in the Vienna Hospital from 1834 to June, 1880,) the head presented

304 times, face, 4; breech, 5; foot, 1; and transverse 1. In 306 of these cases 253 were primiparæ. From an analysis of Rambotham's 59 cases of eclampsia, it is fair to assume that there was not one of transverse presentation. Of the 14 cases in 7,404 deliveries in Guy's Hospital Lying-in Charity, there were 13 head presentations, no transverse. In short, in a total of 300,018 labor cases collected by Dr. King, with 212 cases of eclampsia, there is only *one* distinctly isolated coincident occurrence of eclampsia and transverse presentation during labor; and in regard to this case there is no concise account.

As Dr. King very fairly adduces arguments against his theory, and discusses them impartially, yet without at all disproving it, we may now rest the case with the reader, but with the regret that we cannot go more fully into the subject. The theory, or explanation, is reasonable, and the paper is one of rare interest.

LOUISIANA STATE MEDICAL SOCIETY.

The ninth annual meeting of this Society was held in Alexandria, La., April 11, 12, 13, 1887. Some valuable papers and reports were presented, and several topics of special interest to the profession of that State were discussed. The following officers were elected for the ensuing year: President, Dr. Joseph Jones, New Orleans, La.; Vice-Presidents, Drs. F. H. Parham, of New Orleans, H. D. Bruns, of New Orleans, Thomas Hebert, of New Iberia, F. M. Thornhill, of Arcadia, I. J. Newton, of Bastrop, and T. T. Tarleton, of St. Landry; Secretary, Dr. P. B. McCutcheon, of New Orleans. The next annual meeting is to be held at Monroe, La., on the third Wednesday in April, 1888.

Tennessee State Medical Society.—At the annual meeting of this Society, held in Nashville, April 12 and 13, 1887, the following officers were elected for the ensuing year: President, Dr. P. D. Sim, of Chattanooga; first Vice-President, Dr. Happel, of Trenton; second Vice-President, Dr. R. Douglas, of Nashville; third Vice-President, Dr. J. M. Masters, of Knoxville; Secretary, Dr. Ambrose Morrison, and Treasurer, R. Cheatham.

The Society contributed $250 for the Treasury of the International Medical Congress to be held in Washington, D. C. Its next annual meeting, in 1888, will be held at Knoxville.

Addresses in the General Sessions of the International Medical Congress.—Many of the medical journals in this and other countries have announced the fact that Professor F. Semmola, of Naples, Italy, is to give a general address on "Bacteriology and its Clinical Therapeutics," to the Congress in general session; and we will add that general addresses are also promised by Dr. Neudorfer, of Vienna, Austria, "On the Military Medicine of the Present and of the Near Future;" Dr. Esmarch, of Kiel, Germany, "On Bloodless Operations in Surgery;" Dr. Lutaud, of Paris, France, "On the Influence of the Discoveries of American Surgeons on the Development of Gynecology in Europe," and Dr. Austin Flint, of New York, N. Y., on "Fever, Its Cause, Mechanism and Rational Treatment"—all topics of interest to the whole profession.

James Stewart Jewell, M.D., died at his residence in this city on the morning of April 18, 1887, aged 49 years and 7 months, after many months of progressive exhaustion. For mental activity, persevering industry, extent and accuracy of knowledge of the specialty to which he was devoted, and in purity of Christian character, Dr. Jewell will be remembered and honored by all who knew him. A more extended sketch of his life and labors will be given next week in the proper department of The Journal.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, March 21, 1887.

The President, Edmund J. Doering, M.D., in the Chair.

Dr. James I. Tucker reported a case of

HERPES OMO-BRACHIALIS.

This class of skin diseases belongs to the neurological group. J. P., aged 36, had for many years been an invalid. In his youth he had been sexually intemperate and had used liquor to excess. He was of a family every member of which had been afflicted with some form of nervous disorder. When he came under the author's care five years ago he was emaciated, anæmic and suffering from profuse diarrhœa. He had pursued the vocation of proof reader until six months previous, when he broke down. His habits were and had been for some time past good in every respect. His principal trouble was a cough of deep, sepulchral sound, which gave him no rest night or day. No mucous or other foreign matter was expectorated. On the 3rd of December there was a neuralgic pain in the right shoulder; on the next day an eruption appeared there attended with an almost insufferable sense of heat.

The vascular eruption was fully developed by the 9th and occupied the shoulder and outward aspect of the arm, following the branch of the brachial plexus and terminating in an immense boil on the ball of the thumb. These vesicles passed through the various stages of vascular irritation, inflammation and resolution, and had entirely disappeared by December 15th. And more remarkable still the chronic cough disappeared altogether. To relieve the pain and burning sensation I used hot fomentations and oleate of cocaine and ointment of glycerine. It was of no use to employ opiates, for although the patient was nervous and sleepless, morphia had no effect upon him. He took 240 grains of chloral hydrate of his own accord at a single dose without any other effect than to make him slightly delirious. The question arises what may have been the relation between the cough and the eruption and why did the cough cease on the disappearance of the eruption?

DR. JOSEPH ZEISLER, in opening the discussion, thought cases of herpes zoster were comparatively rare here; in the last two years he had met with only one, affecting the fourth and fifth intercostal spaces of the right side. Although physiological and anatomical examinations have not yet proven the existence of true trophic fibres in the nerves, there can be no doubt that zoster must be considered as a trophoneurotic disease. The case was especially interesting from the possibility of syphilis being the cause of the disorder, and from the large area involved.

DR. TUCKER said that one point in reference to zoster, especially zoster frontalis, is that chronic bronchitis is sure to follow it, and life generaly terminates in that way.

DR. CHARLES WARRINGTON EARLE asked if the author had not found that these cases almost always require the same tonic treatment that neuralgias do, viz., the exhibition of quinine and iron, and a good, generous diet, before a cure can be effected.

DR. TUCKER replied that all the patients he had seen suffering from the disease have been depleted, and certainly the remedies just mentioned would be needed.

DR. E. L. HOLMES reported a case of

CHANCRE OF THE EYELID.

Cases of chancre of the lids are of interest not so much on account of their rareness as of the difficulty in establishing a certain and early diagnosis, and the fact that suspicion even may not be awakened till quite late in the development. It is many years, probably twenty, since I have seen a case of primary specific sore on the genital organs. If I remember correctly what I formerly observed and what I learned from competent authorities, it is undoubtedly true that even an ulcer on the genital organs cannot always be easily diagnosticated. The swelling of the preauricular glands is quite often the result of simple abscess of the lids, especially if it is situated near the external angle. When, however, a circumscribed disease of the lids is accompanied by multiple preauricular and submaxillary glandular enlargement, suspicion becomes almost certainty. This has been the fact in four of the five cases which I have seen. In one case there was not sufficient swelling of the glands to attract either my attention or that of the patient.

Some months ago I mentioned in this Society the case of a laborer in a rolling mill who received a severe burn on the side of the body from a "flash" and on the left upper lid from a drop of the molten slag. This small round burn became infected from some source unknown to the patient, and after some time presented the appearance of a true chancre with glandular swellings and characteristic eruptions. No evidence of a lesion could be found on the genital organs. Every symptom disappeared under energetic mercurial treatment.

Very recently Mr. P. M., 45 years of age, married, also a workman in a rolling mill received a "flash," a portion of which struck the left upper lid and inflicted quite a severe burn of the integument. The conjunctiva was also slightly burned. At the end of a week the patient came to me with the lids much swollen, red and tender, with a hard, dry, thin and red incrustation as one sees on a superficial abrasion of the skin. The patient stated that he had rubbed the lids several times during the week with the back of his hand, which was more or less covered with grime and sand. He did this to relieve the irritation of the eye. There was nothing in the appearance of the lids or of the eye to excite my suspicion of any complication. For ten days I treated the eye with mild lotions and ointments without the slightest benefit. On the appearance of preauricular and submaxillary swelling I referred the patient to Dr. Hyde. I suspected the true nature of the case, although there was still no trace of ulceration on the lid. Prof. Hyde could simply suspect, but preferred to delay definite opinion for a few days. In a week or more the characteristic eruption appeared with increased severity of the local symptoms. Large doses of blue mass and iodide of potassium relieved all the symptoms, local as well as general. The eye assumed its normal appearance in about three weeks.

DR. F. C. HOTZ said that as the author wished the discussion to be conducted on the line of experience of general practitioners, not specialists, he hardly felt that he was the right person to open it. As the author states, these primary syphilitic ulcerations, chancres of the eyelids, are of very rare occurrence, and in a long experience of private and hospital practice in this country and Europe he could remember but one case coming under his observation of a primary syphilitic sore, and it was located on the conjunctival surface of the upper lid, a most curious place for the infection. A patient came to him about two years ago with the lid tender and very much swollen, and on turning it he saw a large ulcer with all the typical appearance of chancre of the prepuce. There was no doubt of its syphilitic character, but it puzzled him as to how the infection could have taken place there. On questioning the patient he learned that four or five weeks previously he got a little cinder or something in his eye and his room mate turned the upper lid, saw the foreign substance and removed it with his tongue. Further questioning brought out the fact that this man was syphilitic.

Dr. Joseph Zeisler mentioned the possibility of contamination by kissing and by instruments. The most peculiar cases of chancre in regard to the locality, had been related by Deloir in his "Decours sur la Syphilis," some of which could only be explained by certain French habits.

Dr. William T. Belfield said, in reference to one point raised by Dr. Holmes, viz., infection without ulceration, he thought it was a well known fact that it has frequently occurred. There is nothing about syphilitic infection that implies ulceration. The morbid material is introduced into the skin and occasions a certain amount of inflammation at the point of infection. Whether that results in ulceration depends upon the nutrition the parts receive, if they are well nourished there need be no ulcer, but as a rule some of the cells that are formed die and ulceration is the result. Occasionally the inflammation is so slight that neither ulceration nor even induration is produced locally; since syphilis is undeniably inoculated—in exceptional cases—without the production of any features of the hard chancre. Nor is the syphilitic the only virus whose local effects are thus variable; thus, the virus of charbon, or "wool sorters' disease" while usually producing a malignant pustule at the point of inoculation, may be communicated without any local ulceration, indeed by simple inhalation.

Dr. D. A. K. Steele read a paper entitled

INTUSSUSCEPTION IN INFANTS.

Intussusception or invagination of the upper into the lower part of the intestine, embraces three layers of the bowel which include all the coats of the intestines. The diagnosis of intussusception in an infant is usually an easy matter; a baby previously in good health, is taken with sudden violent vomiting, with loud cries and evidence of abdominal pain and uneasiness occurring at frequent irregular intervals accompanied with severe straining and the passage at first of fecal matter, then a mucous tinged with blood, and later of blood alone in considerable quantities. Thirst, anxious expression and collapse are marked symptoms. A distinct sausage shaped tumor can frequently be felt at the seat of the obstruction in the abdomen.

Treatment may be divided into medicinal, mechanical and operative. The medicinal plan is palliative but rarely curative.

The author described the details of the mechanical plan of treatment as follows: Having clearly established a diagnosis of intussusception and previously given an opiate to quiet all peristalsis. I anæsthetize the child with chloroform and then carry a rectal tube or large catheter about six inches within the anus. Attached to this tube I have a flexible rubber tube two or three feet long attached to a small glass funnel. Into this funnel I pour alternately solutions of soda bi carbonate and tartaric acid, thus generating carbonic acid gas and rapidly and safely inflating the large intestine. Three drachms of each will generate enough gas to completely distend the colon of a child. If this pressure is not sufficient to relieve the obstructions, I attach an ordinary double bulb syringe and inflate with air about as much a I think the bowl will stand, while the abdomen is being carefully manipulated by an assistant. I patiently, persistently and repeatedly employ these measures coupled with massage, abdominal taxis, inversion of child, etc., from twenty-four to forty-eight hours, when, if there is no relief, I advise laparotomy. In case the obstruction is at the ileo cæcal valve and is irreducible and an artificial anus cannot be readily formed, an ileo-colotomy or implantation of the divided ileum above the obstruction into a slit-like orifice in the colon below the obstruction would be justifiable procedure. Senn's recent experiments on animals prove that it can be done with success. Several cases were reported which had been successfully treated by the mechanical method.

Dr. C. W. Earle, in opening the discussion, said that Dr. Steele had presented the symptoms of this terrible difficulty so fully that there is little more to be said. He was glad that the author dwelt upon the symptom of constriction of part of the bowel, which is probably one of the chief causes for this accident. He must take issue with him in regard to the ease with which he diagnosticates some of these cases. Dr. Steele's experience has been very different from his own when he is able to say that the diagnosis of intussusception in a child is made out without much difficulty. In a number of cases he has seen there has been an absence of all the symptoms which the author has narrated. He remembered a case which occurred several years ago in an outside village, in which he made the post-mortem examination and found a very distinct intussusception. In that case we could get none of the symptoms Dr. Steele has spoken of; there was no tenesmus, no bloody discharge, no protrusion of the invaginated portion of the intestine, no sausage-shaped tumor of the abdomen, and yet the child had intussusception, probably from eating a large amount of cherries as a number of cherry pits were found in the bowel at the autopsy.

As a medical man it might be expected that he would oppose a surgical procedure, but the medical treatment of this difficulty is so absolutely hopeless that it seems to him if laparotomy offers anything at all we should be ready to accept any procedure the surgeons have to offer. However, the results of Dr. Steele's process of treatment by inversion and shaking and filling the bowel are really better than those of surgeons up to this time. It is a well known fact that laparotomy for the relief of intussusception is followed by greater mortality than laparotomy for any other cause. But if the diagnosis is well made out, and particularly if the pulse is rapid and the child shows profound symptoms which point unmistakably to this difficulty, it seems to me we are hardly justified in waiting three days; he thought at the end of twenty-four hours we should cease to try the ordinary methods and proceed to do the operation.

Dr. F. E. Waxham said he agreed with Dr. Earle in regard to the difficulty of making the diagnosis in cases of intussusception, especially in infants. In many cases he thought the diagnosis very difficult indeed, and sometimes a certain and absolute diag-

nosis is almost impossible. This is true for the reason that all the symptoms that have been enumerated as characteristic of the disease are not present in every case; the tumor is as frequently absent as present, if a small amount of intestine is involved in the intussusception it is impossible to detect it. Again, the bloody discharges are frequently absent, and the protrusion of the intestine from the anus which is given as a prominent symptom, is often absent. Indeed, in many cases the incessant vomiting, obstinate constipation and the tenesmus are the only symptoms. He would refer to the differential diagnosis of intussusception: fecal impaction occasionally presents symptoms analagous to intussusception. Impaction is rare in infancy, but is more frequently observed in the adult and in the older children. It may give rise to a tumor, vomiting, tenesmus, tympanites and even protrusion of the intestine from the anus. These symptoms closely resemble those of intussusception, but in impaction the vomiting is not usually as obstinate and large, copious enemas will cause the disappearance of the impaction. Again, in impaction we do not get the rapid and great prostration that is observed in intussusception. Cholera infantum may be mistaken for intussusception, for we have the same rapid and great prostration and collapse, we have the incessant vomiting, but in cholera infantum we have the large, copious watery passages instead of the obstinate constipation followed by the bloody discharges. Dysentery presents symptoms closely resembling intussusception in many cases; we have vomiting tensmus, frequent straining, bloody passages and not unfrequently protrusion of the intestine from the anus, but in dysentery the vomiting is not so obstinate nor the prostration so great. Typhlitis may present symptoms very closely resembling intussusception, as the result of inflammation at the ileo cæcal valve we will have vomiting, intestinal pain, tympanitas, obstinate constipation which it is impossible oftentimes to overcome. The diagnosis in these cases is very difficult, and I know of one case of typhlitis where several surgeons thought seriously of operating for a suspected intussusception.

But in typhlitis the tumor, which results from inflammation and infiltration is in the right side, while in intussusception the tumor when observed is in the left iliac region or in the transverse colon, for although the intussusception takes place at the ileo-cæcal valve if the tumor is large enough to be observed the smaller intestine rolls in the larger until the tumor appears in the left side instead of the right. In typhlitis we have a history of acute inflammation, not so in case of intussusception. Peritonitis will also frequently give rise to symptoms resembling those of intussusception; we have frequent vomiting, obstinate constipation, abdominal pain and tympanites. He remembered a case that was treated for several days for intussusception, and not until the administration of morphia and lime water was the vomiting overcome and a correct diagnosis made. The vomiting could not have been relieved by medication in a case of intussusception. In peritonitis we usually have the gradual onset of the disease, more sudden in case of intussusception. In peritonitis we have the symptoms of acute inflammation existing for several days before we get symptoms of obstruction. In intussusception the symptoms of obstruction and shock appear early. In peritonitis, although the constipation is often obstinate, yet the vomiting is not as frequent and uncontrollable as in intussusception, nor do we have the rapid prostration in the former disease that is so characteristic of the latter. There are other forms of obstruction, such as the twisting of the intestine upon itself, pressure upon the intestine by a band of lymph, or strangulation of the intestine in a congenital opening in the diaphragm, any of which will give rise to symptoms exactly corresponding to intussusception.

In regard to the treatment, little remains to be said. Not infrequently when an intussusception is suspected, the cases are treated with physic, castor oil, croton oil, or quicksilver, in order to prove the diagnosis. This treatment should be mentioned only to be condemned. No remedies should be given that will increase the peristaltic contraction, but opiates given to prevent it. Quicksilver may be used with benefit in those cases where the invagination is low down in the bowel, or where the intussusception is of such extent that it reaches into the lower bowel, or perhaps near the anus. In such cases the child should be inverted and the quicksilver used per rectum, and the pressure and weight of the quicksilver will assist greatly in the restoration of the invaginated mass. He fully agreed in the recommendation of laparotomy in cases where mechanical measures fail. When we have faithfully but unsuccessfully tried medicinal and mechanical measures, he thought we should resort to laparotomy, providing a positive diagnosis can be made, and we should not delay too long, for the longer the operation is delayed the less the chances are of recovery.

Dr. A. E. Hoadley wished to make one suggestion as to the surgical treatment of these cases. The author, on going into the surgical treatment thoroughly, had left the idea, he thought, that about all that can be done for cases of acute invagination of the intestine is to unfold the invaginated intestine, and if this cannot be done, it must be excised and an artificial anus made. Of course he does not advise the resection of the invagination, but advises an artificial anus as a temporary means. Now where this invagination is acute it obstructs the lumen of the intestine, and all the urgent symptoms are consequent on the obstruction of the bowels, not that the tissues are liable to ulceration or sloughing provided that the tension above the invagination is promply relieved. If the tension above the stricture is relieved the tissues at the stricture can take care of themselves, the strangulation will be immediately relieved in a measure, so that the circulation can be carried on at the seat of invagination. Relief of tension controls peristalsis and no further invagination will take place, congestion will be relieved and the tissues saved. There has been an operation suggested for that purpose which is applicable in all cases where to unfold the invagination is more dangerous than to leave it alone or excise and establish

an artificial anus. The operation is to bring that portion of bowel above the invagination to that immediately below and there make an opening in each, stitch the openings together, and thus form an outlet for the distended intestine above. In case the invaginated portion loses its vitality there is no objection to its sloughing, as the slough can readily pass down, as the gut is not closed above. In his own practice he had seen two cases of recovery from intussusception, in which there was no doubt about the diagnosis; in one case a sausage-shaped tumor could be felt across the median line, with all the acute symptoms except, perhaps, the bloody discharges. The invaginations in these cases were of the colon, and not ileo-cæcal, and the lumen of the gut was not completely closed. There was no particular distension, but there was a large and painful tumor, with tenesmus and diarrhœa. In one case, in which the diagnosis was confirmed by several physicians, the tumor remained for more than a year, and at any time, if pressure was made over it, there would be tenesmus of the bowel, yet the child, who is now 8 years old, has fully recovered. He has a patient now under treatment in whom two and a half months ago there was probably intussusception of the colon. A painful tumor presented on the left side which could be plainly felt from day to day, associated with all the irritable symptoms of the bowels, but the invagination did not occlude the lumen of the bowel, therefore the most distressing symptoms were absent. This tumor has gradually grown smaller, less tender, less painful, and the child is now about free from the irritation caused by that invagination.

Dr. J. Frank asked if, when the invagination is situated above the ileo cæcal valve, water injected would pass the valve itself? He hardly thought the small amounts the author speaks of having injected would have reduced the invagination. He was not opposed to giving cathartics in cases where they might do good, and thought sometimes they do not do as much harm as an operation. The intestines are held up by mesenteries, and if the principal part of the intestine cannot invaginate itself where it is held fast it cannot come down. A cathartic which produces a peristalsis is always towards the rectum, and if the part is held up by the mesentery, the peristaltic motion will not bring it down any further, and yet will relieve the intussusception. He thought many cases are cured by cathartics. He had a case some time ago where the child was pulseless and cold, the eyes turned on the sockets, there was tenesmus and vomiting. After trying nearly everything an enormous dose of calomel was given, and as soon as there was a movement of the bowels the child was all right.

Dr. J. E. Colburn said that some years ago he had an interesting case; in the early morning he was called to see a child whom he found breathing with great difficulty and presenting many symptoms of acute bronchitis. He listened carefully and thought he located the region of the disturbance. Leaving some remedies he went away, promising to call late in the afternoon. During his absence the family became alarmed at a change of symptoms and called in another physician, who assured them that he was mistaken; that the child had acute gastritis. When he went back in the evening the child was purging and passing blood. He made an examination and found a tumor corresponding to the tumor described to-night. He gave a grave prognosis, left directions for the use of some remedies, and promised to see the child in the morning if it was still alive. The next morning when he called the mother told him the child was better, and showed him a chicken's foot and leg that it had swallowed.

Dr. Earle asked Dr. Steele to give the statistics in regard to the use of chloroform and ether with children.

Dr. Steele, in closing the discussion, said, in regard to Dr. Earle's query as to the ease of making the diagnosis: I would say that the diagnosis is not always an easy matter, and I do not wish to convey that impression. In the first case I reported the diagnosis was easy, because the case presented the symptoms laid down in the books as nearly as could be: there was vomiting, tenesmus, bloody stools, absolute constipation and a lozenge shaped tumor—but that is the only case of the four reported in which we had all the symptoms; in two there were no tumors at all, in one the tumor was indistinct and irregular in outline. There was no pain in that case. In none of the cases was the diagnosis verified by a post-mortem. There is an element of doubt as regards the diagnosis, but it had been formed in each case after careful examination by competent physicians, and was considered fairly certain. In regard to the relative safety of ether and chloroform in children, I cannot give the statistics, but the administration of chloroform to children is a very safe procedure as compared with its administration to adults. In regard to the differential diagnosis, Dr. Waxham presented all the points very fully. In a paper of this character I did not wish to go into that subject. In regard to the operation of cutting the bowel above and below the point of obstruction, that I alluded to as an operation having been done experimentally on animals with success by Dr. Senn, of Milwaukee. So far as I know there are no statistics showing that it has been done on man. The case of obstruction occurring in a child, with painful tumor, spoken of by Dr. Hoadley, was a case of chronic obstruction in which the lumen was not perfectly occluded, and those cases are not dangerous. So long as the lumen is not absolutely interfered with the processes of nutrition go on. Cases of chronic obstruction were not considered in the paper; I spoke only of acute obstruction due to intussusception. Water passes the ileo-cæcal valve by dilatation from over-distension. I have seen the experiment tried on animals; by opening the abdomen and forcibly injecting water the colon would become distended to its utmost capacity, and by-and-by the tissues would begin to yield, the valve would become incompetent and the water would pass. The quantity of water used for injections was smaller than if the obstruction had been higher up. The case of acute obstruction mentioned by Dr. Frank, that was relieved by a large dose of calomel, was probably acute enteritis, such a case as would have been relieved by bleeding,

many years ago. When we are called to these cases of acute intestinal obstruction where there is a doubt as to its cause, we should take into consideration all the factors: the age of the child, the sex, the suddenness of the onset, the presence of a majority of symptoms that are said to be present in intussusception, and then make a thorough, complete and systematic palpation of the abdomen, aided, if necessary, by the distension of the colon with carbonic acid gas. By the alternate injection of an acid and alkaline solution into the rectum you can distend the colon so that it can be mapped out perfectly, and you can distermine the location of the obstruction.

Dr. Elbert Wing exhibited some pathological specimens, and said: These specimens were obtained at the County Hospital to-day, and I bring them to you to-night because specimens are more interesting when they are fresh. The case came to the dead-house without any history except that the man was known to have some trouble with his heart. The internes were careless and no careful record was kept. The man was about 60 years old and very fat. There was no fluid in the abdominal cavity. The pericardium contained perhaps 30 cu. cm. of clear serous fluid, and the heart was considerably larger than the man's fist, with one or two of the so-called "milk spots" on the surface. The right auricle was distended with dark, partly clotted blood, the right ventricle contained a very small quantity of fluid blood and a small clot; the left auricle and ventricle were empty. Upon section the heart showed no lesion of the valves; there was slight atheroma at the base of the aorta. The endocardium showed the streaks and bands of grayish discoloration which are taken as evidence of chronic endocarditis; there was also, over the surface of the endocardium, the mottled appearance of myocarditis with fatty degeneration. The left pleural cavity was empty and without adhesions. The surface of the lung presented a few spots of emphysema, and upon section the bronchial tubes were found extremely congested and lined with a thick coat of mucus throughout the bronchial tree. On the right side there was an adhesion along the median line, and on breaking this found 3700 cu. cm. of a clear serous fluid, slightly reddish, containing no shreds and no plaques of fibrin. The entire costal pleura of this side was much thickened, of a slightly velvety appearance and bright red color, easily separated from the underlying tissue and easily torn in manipulation. The deposit of fibrin could be removed only by considerable force, and the pleural surface then showed manifold small red dots, resembling the mouths of severed capillaries. Completely covering the surface of the right lung there was a film of lymph which varied in thickness from that of a heavy sheet of blotting paper to 1 or 2 millimetres. Over the lower lobe this had taken on organization and contained bands of connective tissue. Throughout the extent of the visceral layer of the pleura it could be removed, leaving the surface smooth and glistening. The lung on the cut surfaces is of a steel gray mottled with spots of pigment discoloration. It is completely devoid of air, and a piece cut out from it and thrown into the water sinks. Upon the superior border of the spleen there is a small plaque in which the connective tissue of the capsule is largely increased. The cut surface of the organ presents a mahogany color and as a whole is quite firm, verifying the diagnosis of what we would expect to find in such cases, chronic passive hyperæmia of the spleen causing an increase of the connective tissue. The kidneys were hardly enlarged at all, the capsule was not thickened and was easily removed. Upon section the cut surfaces of each of the organs was a very dark red color, the vessels all full of dark-colored blood, and the organs slightly firmer than normal. The left lobe of the liver presented a peculiar appearance. It looks and feels a little granular, and that seems to be due to a wrinkling of the capsule. There was a similar appearance along the anterior border, and near the line of the suspensory ligament. This large spot was triangular upon the surface, say 5 cm. along each side, and extended into the organ in a pyramidal shape, the apex being near the hylus of the organ. The line of demarcation between this wrinkled and the unchanged surface of the organ is sharply defined. On section these portions of the organ present the characteristic appearance of advanced simple atrophy, a dark brown slate-color, the lobule distinct but very much diminished in size. That portion of the organ not described is in the condition known as "nutmeg liver." The omentum is in a condition rarely seen. It is $25 \times 12 \times 1.5$ cm., somewhat lobulated, and along the anterior surface there are broad radiating bands of fibrous tissue. The organ as a whole is very firm and solid, and on section little lobules of fatty tissue can be isolated. The condition is that of marked hypertrophy of the fatty tissue of the organ, together with a great increase of the connective tissue, the latter due to chronic passive hyperæmia, the former part of the general marked increase of adipose tissue throughout the body. There was also considerable œdema of the right leg, but no thrombosis in the iliac vein. Examination of the veins outside of the abdominal cavities not permitted. With the conditions described as a basis, the diagnosis is: chronic endo-myocarditis with fatty degeneration; chronic pleuritis (costal) with effusion, atalectasis from compression, right side; chronic passive hyperæmia of spleen, kidneys and liver, with added circumscribed simple atrophy of the latter; hypertrophy and chronic passive hyperæmia of the omentum; chronic venous thrombosis with œdema of the right leg.

(*To be concluded.*)

CHICAGO GYNÆCOLOGICAL SOCIETY.

Stated Meeting, Friday, February 18, 1887.

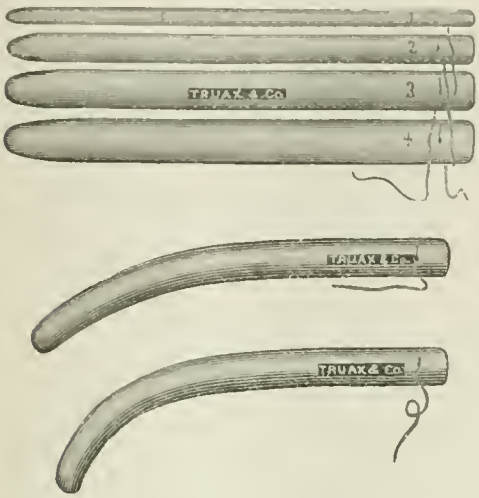
Philip Adolphus, M.D., in the Chair.

Dr. Henry T. Byford made the following remarks on

THE SLIPPERY ELM TENT.

For quite a number of years, I have been using slippery elm tents in the treatment of uterine disease.

Within the last few weeks, I have received from Messrs. Charles Truax and Co., of this city, some improved tents made out of the compressed bark. By compression, its dilating power is increased so as to render it useful as a substitute for tupelo, sea-tangle and compressed sponge in many cases.



The characteristic of slippery elm bark is that upon being moistened a slippery substance exudes, which acts both as a lubricant to the tent, and as a protection to the mucous membrane against that injury or abrasion which sometimes follows the use of dilators of this class. Another advantage is the rapidity of its action. The tents expand sufficiently within an hour or two for the introduction of a larger size, or two or three of the same size. This may be repeated until the desired dilatation is obtained, and since the expanded tents are both soft and slimy, with a minimum amount of injury to the parts.

A small elm tent may be introduced at the office and left for twelve or twenty-four hours and thus serve, providing it be used once or twice a week, as a mild substitute for the intra-uterine stem in cases of sterility. The patient can go home and keep quiet until she removes it by the attached string, upon the advent of severe pain, or at the end of the twenty-four hours. A glycerine tampon placed under the cervix is necessary in such cases to retain it in place.

These tents are also available as applicators, for the exuding lime carries the drug out from them instead of into them, gradually dilutes it, and thus limits its action.

As dilators and applicators in vaginitis, vaginismus, urethritis, urethral stricture, etc., they are also useful, and may be ordered of any size, shape or curve desirable.

They should be kept in a tightly covered box or bottle, as they become brittle and lose their rapid expansive power when they get too dry. It would be a good thing to dip them in gelatine or cocoa butter when they are to be preserved for a long time.

Dr. A. Reeves Jackson: I have used slippery elm tents a great many years, and I have no doubt that the form in which they are now presented by Dr. Byford will render them more suitable for dilating purposes than heretofore. In this form, however, I have made use of them recently, and have been disappointed as regards their dilating power. Slippery elm forms a slimy mass at the expense of its substance, and while this mucilaginous mass and the mucous discharge which appears with it causes the tent to seem large, the latter does not exert much dilating power, and I was surprised to find that after moistening one of these compressed tents for several hours in water, it was very little larger than before. I have had a great deal of satisfaction in using flat pieces whittled out of the slippery elm bark, in the following manner: I use a small sponge tent, and in order to get the expansive power of that material surround it with a cordon of these slips, so as to protect the mucous membrane from injury. I think that in the combination of sponge tent and slippery elm we have the best means for tent dilatation. In this way we get the dilating power of the sponge with the protective effect of the slippery elm.

In cases which stenosis seem to be the cause of sterility, I use non-expansive stem pessaries. My experience in the use of the intra-uterine stem has been very large, and I find, in order to effect any change of structure, that it is usually necessary to carry out the treatment for many months. I have never succeeded in changing materially and permanently the direction of the cervical canal in less than six or eight weeks, and sometimes over a year has been required. The stem may remain undisturbed for many months. This makes a great difference to the patient, who otherwise is obliged to have the instrument changed frequently. I use chiefly a very flexible soft rubber stem, which may be introduced and worn for months without irritation. It may be of different degrees of flexibility, a very small one at first and of very slight straightening power, and by and by another, larger and stiffer, and so on until at the end of some weeks or months the desired change is produced. I think the use of a substance that is not absorbent and does not dilate superior in these cases.

Dr. H. T. Byford: I have had many cases of sterility of several years' standing, dating from marriage, cured by three or four or more small tents used once or twice a week. Their power is milder than that of compressed sponge, and less radical than that of the intra-uterine pessary. These negative qualities are the accompaniments of nearly all safe remedies. If Dr. Jackson had watched the compressed elm tent, which seemed to expand so little in several hours, he would have found that it expanded two or three times its own diameter in less than two hours, and then became smaller again by having its softer portion dissolved out. In the uterus its substance is not washed away as rapidly as in a basin.

Dr. W. W. Jaggard exhibited a

PLACENTA WITH MARGINAL INSERTION OF AN ABSOLUTELY SHORT UMBILICAL CORD, MEASURING NINE INCHES IN LENGTH.

The specimen, placed at his disposal by Dr.

Charles Caldwell, was of interest in connection with Dr. John Bartlett's paper, read at the January meeting. The absolute shortness of the cord in Dr. Caldwell's case did not constitute a mechanical hindrance to the progress of labor, although there was some slight difficulty in ligaturing the organ, after birth of the child, on account of the proximity of the navel of the child to the vulvar orifice of the mother.

Dr. Jaggard also made some remarks on

THE ANTISEPTIC OBSTETRICAL PADS OF DR. H. J. GARRIGUES AND DR. WM. L. RICHARDSON.

Dr. H. J. Garrigues describes the application of the pad in the following words: The well closed vulva is covered with a pad of absorbent cotton, wrung out in the solution (1,2000). Outside of that comes a piece of oiled silk or preferably thick guttapercha tissue dipped in the solution. To keep this antiseptic part of the dressing in place I use a large pad of dry absorbent cotton, and a rectangular piece of canton flannel or square piece of unbleached muslin, half a yard in both directions, and folded diagonally like a cravat. Dr. Wm. L. Richardson substitutes absorbent scrap or waste done up in cheese cloth for the absorbent cotton. Of course, Dr. Richardson does not insist upon the pad as essential. There is nothing peculiar about the pad except that it seems to me to be a very convenient and safe form of dressing to use. The main thing is the use of antiseptics all through the delivery, and the pad is all that is needed for the convalescence.

The important services, rendered to the profession and community, in the prophylaxis of child-bed fever, by Garrigues and Richardson, demand recognition. In the New York Maternity Hospital the mortality from sepsis—Oct. 1, 1882, Oct. 1, 1883, 429 patients—was 6.06 per centum. Garrigues has reduced this mortality to—Oct 1, 1885, Oct. 1, 1886, 463 patients—21 per centum.

In the Boston Lying-In Hospital, the mortality from sepsis, Jan. 1, 1882, Dec. 31, 1882, 288 patients—was 5.55 per centum. Richardson has reduced this mortality to—Jan. 1886, 373 cases—.0 per centum.

The American woman insists upon wearing some kind of a napkin to absorb the lochia. If she wear one at all, it must be antiseptic.

(To be continued.)

DOMESTIC CORRESPONDENCE

GALVANIC MEASUREMENT.

Dear Sir:—The enterprising spirit of Dr. Engelmann, as exhibited in his letter to The Journal of April 16, in which he criticises me for statements in reply to Dr. Cutter's letter in The Journal of February 5, is really very refreshing.

First, he says: "In No. 7, February 12, 1887, p. 195, Dr. Martin tells us that he has used from 25 milliampères to 10 ampères through a fibroid tumor, with one surface electrode and without causing pain enough to require an anæsthetic. Ten ampères . . . would scorch the body as would a stroke of lightning. This is impossible." Dr. Engelmann continues on this line: "No man ever has or ever will pass 10 ampères through living tissue, as this would scorch the skin and destroy the activity of the nerve tissue." I would like to inquire as to the kind of scientific man who dares to make such unqualified statements in regard to the past, and assert such absolute prophesies of limitations in regard to the future of a subject which all unbiased minds admit is but in its infancy! It is with reluctance that I must remind him that for once he occupies the position which the scientific world did when it "was astonished when Apostoli employed 100 milliampères, which he has increased to a possible 250 with one surface electrode." Here, in Chicago, by means of our improved abdominal electrode of very large surface, the principles of which I described in a paper to the Chicago Medical Society December 20, 1886, an abstract of which appeared in The Journal of January 15, 1887, and the full text of which appears in this week's number of The Journal, I have frequently used a current of 500 to 1,000 milliampères without an anæsthetic, without severe pain, and with the same surface electrode double, I have used on one tumor, with very great depth of uterus, a current of 10 ampères; and this, too, without an anæsthetic, without "giving excessive pain;" without "burning the integument;" without scorching the skin and without "destroying the activity of the nerve tissue."

Secondly—Dr. Engelmann says: "I am glad to see that Dr. Martin is seeking to define and record his treatment more accurately." I am surely very much gratified to have the fact duly recorded that he notes signs of improvement in my later writings, be they ever so slight; because to admit no progress would be to infer retrogression. At the same time, I am willing to have my first paper on electrolysis thoroughly examined, by an impartial critic, for any loose or inaccurate statements.

Thirdly—Dr. Engelmann further modestly remarks: "It is a satisfaction to me to see that he (Dr. Martin) has accepted my criticism of his paper which I made before the Section of Obstetrics and Diseases of Women at the St. Louis meeting of the American Medical Association in 1886." "I then urged," he continues, "the importance of the galvanometer and the necessity of exact measurements, strong currents, and short sittings." If Dr. Engelmann remembers—and if he does not a perusal of my paper referred to may serve to freshen his memory—he will find that the above advice was entirely superfluous so far as it was applicable to me, with the exception of his reference to stronger intensity. In regard to this latter point I will confess, in order not to seem under too great obligations to Dr. Engelmann, that I had heard of Apostoli, and had investigated pretty thoroughly his method and recognized its advantages, long before I ever had the honor of hearing Dr. Engelmann's views.

Finally, I will state, in order to more definitely define my present position, that I am obtaining very gratifying results in the treatment of fibroid tumors

by a modification of Dr. Apostoli's method. By the employment of improved surface electrodes by which the current is widely diffused, by which the complete adaptability of the surface of the electrode to the surface of the body is accomplished, by which the minimum resistance is obtained consistent with minimum pain, I have been able, as stated above, to use a current of much higher intensity than Dr. Apostoli, or even Dr. Engelmann. The current that I ordinarily employ now varies, according to indications in different subjects, from 100 to 1,000 milliampères, and this without ever arousing one alarming symptom. Respectfully yours,

FRANKLIN H. MARTIN, M.D.

163 State St., Chicago, April 8, 1887.

NECROLOGY.

DANIEL DRAKE CARTER.

DANIEL DRAKE CARTER, M.D., of Versailles, Woodford Co., Kentucky, was born in that place, October 12, 1837, died of congestion of the lungs at the residence of his mother, in Versailles, December 12, 1886. He was the son of Dr. Joseph Coleman Carter, who was born in Charlottesville, Va., December 23, 1808. A kinsman on his mother's side of Dr. Daniel Drake with whom he studied medicine. He took his medical degree at Jefferson Medical College, Philadelphia, Pa., 1831. Died January 26, 1876.

His grandparents on his father's side were Goodloe and Mary (Crenshaw) Carter. He was therefore descended from the eminent Robert Carter, of "Carter's Hall," Virginia. The mother of the subject of this notice, still living at the age of 77, is the youngest daughter of George Carlyle and the granddaughter of Robert Carlyle, who came to Virginia from Scotland, in 1730. George Carlyle removed from Virginia to what is now known as Woodford Co., Kentucky, in 1784, and in 1790 married Margaret Crockett, daughter of Alexander Crockett. George Carlyle died in 1827, aged 73 years. This branch of the Carlyle family is somewhat noted for longevity, as five sisters and one brother of Dr. Carter's mother lived to celebrate their golden wedding. Dr. Daniel Drake Carter, the subject of this note, was of delicate constitution from infancy. In consequence of this his education was mainly conducted by his father, or at home schools, the village academy and by private tutors. With a view to strengthening his constitution his father had him spend as much time as possible in the summer seasons on his farm, near Versailles, and endeavored to have him become interested in agricultural pursuits. Knowing the severe labor and exposure attending the practice of medicine in that section, he did not wish his son to enter the medical profession. Dr. Joseph C. Carter was a scholarly man, who enjoyed and deserved a large practice, and had his residence been in a populous city, his proficiency in chemistry and the natural sciences would have of themselves won him a place among the leading teachers and scientists of his day. While attending a large country practice he therefore made his desultory studies and observations in geology and botany a sort of recreation. His love of study and high appreciation of scientific education made him the more solicitous to secure a good education for his son. This was not a difficult task, for from his early youth he took to books and rapidly acquired knowledge. But notwithstanding the father desired him to select some profession or pursuit other than that of medicine, his son adopted physic after mature deliberation, preferring it to any other calling.

Before Dr. Carter began the regular study of medicine his father made a most advantageous business arrangement for him with a firm of bankers at Davenport, Iowa, where he spent one year. Drake, as he was familiarly known, then made known to his father that he earnestly desired to study medicine and pursue the practice notwithstanding all the exposure and exactions attending a physician's life. Returning home, he at once entered upon its systematic study with his father. In 1859, he entered the Long Island College Hospital, New York, for the spring or reading term. He also returned the following year. His tickets to the course in practical chemistry bearing date March 29, 1860, and for 1861, now lie before me. The second was, however, abruptly terminated by the medical students of the South withdrawing from the College and returning to their homes, owing to the political excitement and the beligerent attitude assumed by the Southern and Northern States toward each other. Dr. Carter at once returned to Kentucky, and matriculated in the University of Louisville where he attended lectures the remainder of the season, and was examined and received his diploma at the commencement in January, 1862.

He wrote his thesis on "The Blood, its Source and its Function." Dr. Carter warmly espoused the cause of the South, and without going to his home accepted the position of surgeon in the 5th Kentucky Cavalry under Col. Howard Smith, in the command of Gen. Buford. He also served as brigade surgeon on the staff of Gen. John H. Morgan, and was captured at Buffington's Island in the Ohio river, in July, 1863, as was most of that command. After having been paroled he went to the City of New York, where he resumed his medical studies with his warm personal friends Drs. James R. Wood and Lewis A. Sayre. He spent the winter in the hospitals and at the Clinics of Profs. Wood, Sayre, Flint and of other leading teachers in that city. In the spring of 1864 he grew impatient and could no longer remain idle while his friends in the South were putting forth all their energies to repel coercion and maintain their sovereignty. Not being able to pass through the army lines to the South, he went to Halifax and from thence sailed in a blockade runner for Wilmington, N. C., hoping to get into the Southern Confederacy and render such services as he could to aid the cause. The vessel, however, was captured just as she was entering port. He was one of three on board who would not swear that they were

British subjects, and was consequently sent as a prisoner to Fort Lafayette, New York, and afterwards transferred to Fort Warren, Boston harbor, where he was kept as a prisoner of war until May, 1865.

Dr. Carter, on regaining his liberty, returned home and immediately entered upon the practice of his profession in conjunction with his father. The young doctor was well prepared by extensive reading, careful college and hospital training, to discharge the responsible duties of a physician. He was most enthusiastically devoted both to the study and the practice of medicine. His efficiency and zeal soon won for him an extensive and lucrative business. He was a man of high culture, gentle in disposition, courteous and dignified in his intercourse with patients and his medical brethren; fond of music and the fine arts and of cultured society. He was strictly temperate, never using tobacco or intoxicating liquors. And what is rather uncommon with physicians a good business man, collecting his earnings and invested his means with rare judgment. He was a consistent member of the Presbyterian Church from his youth. His parents and grandparents on both sides belonged to the same religious denomination.

Although Dr. Carter was of slight frame, he possessed much mental activity and great physical endurance. The amount of labor he was capable of performing was a surprise to all his friends. He possessed special aptitude for surgery, having a comprehensive and an accurate knowledge of anatomy and physiology, and the dexterity, courage and fortitude so essential to make the successful operator. He performed with success some capital and hazardous operations in the circuit of his practice, rarely undertaken except by specialists in well organized hospitals. His neighboring physicians, too, had a high regard for his judgment in difficult cases, and frequently called him in consultations. His great forte was at the bedside, where his real genius showed itself in diagnosis and in the suggestions of new methods and in giving encouragement and comfort to the despondent patient. For a busy rural practitioner he made an unusual number of post-mortem examinations, and was, to the close of his busy life, a student and a careful observer, and would undergo any amount of labor to verify or disprove the diagnosis of an obscure case. The writer of this sketch was for a time, in 1875, somewhat out of health, and having accepted an invitation to rest a couple of weeks at one of Kentucky's most hospitable of homes, on the splendid estate of "Spring Hill," near Versailles, where he became well acquainted with the subject of this sketch. Here he met daily and often during the day, Dr. Carter, then in excellent health, and in the enjoyment of a full practice. The high opinion then formed of Dr. Carter as a skillful physician and affable gentleman, the universal esteem in which it is evident his memory is held by the profession in Kentucky, has been fully justified. We visited the celebrated stock farm of Mr. Alexander, known as Woodburn, and together attended the burial of the great race horse "Lexington," whose skeleton was obtained from the owner on my application and Dr. Carter's intercession, and is now handsomely mounted and forms a part of the great collection of comparative anatomy in the Smithsonian Institute, in Washington, D. C.

In 1875, Dr. Carter met with an accident while performing a surgical operation by wounding the index finger of the left hand, and from which he suffered blood poisoning. This accident and its results for a time alarmed his friends and did seriously impair his health, and it is probable that he never entirely recovered his full degree of vigor afterwards. In the fall of the same year he suffered an attack of bilious fever, which ran a more than ordinarily protracted course, from which he, however, slowly recovered.

In 1876, he had an attack of pneumonia which still farther debilitated him. His practice was at that period large, and being ambitious, he overworked and entirely neglected himself. Although he continued to labor efficiently for years, he nevertheless labored at a disadvantage from a naturally delicate constitution which was farther impaired by disease.

Dr. Carter was twice married. His first wife was Miss Louisiana Hart Gibson, a most lovely and accomplished lady, the sister of Senator Randall L. Gibson, of Louisiana, to whom he was united February 15, 1876. She survived her marriage by but one year, dying February 14, 1877, leaving a daughter, who followed its mother to the spirit land April 12, 1880. His second marriage was on the 31st of October, 1882, to Miss Sallie, daughter of Humphrey and Elizabeth (Scott) Fullerton, of Chillicothe, Ohio. From this union one child, a son, Joseph C. Carter, was born July 28, 1884, who, with his mother, survives. Dr. Carter's mother and three sisters survive him. During the later years of the doctor's life, he attempted to lessen his professional labors and retired to his farm, "Rock Castle," but his patrons followed him there and he was obliged to seek rest at a distance. He made three pilgrimages to Florida for his health. In April, 1886, he had an acute attack of double pneumonia, which seriously impaired his health and alarmed his friends, and after spending some time on his farm was advised to go to Asheville. N. C. This change brought no relief, but added to his suffering and discomfort, and he returned home, where he received every attention from medical friends and from a devoted wife, his mother and sisters, until his soul returned peacefully to the Giver of life.

Dr. Carter was a member of the Kentucky State Medical Society and was sent by it as a delegate to the American Medical Association in 1872; he also attended the meetings in 1873, 1874, and 1875. He was a member of the Masonic order and a Knight Templar of the Commandery of Versailles. This Commandery held a special meeting and passed a series of appropriate resolutions of respect for his worth, and of sympathy for his bereaved family, which were published in the Versailles paper.

His funeral took place from his late residence and that of his mother, in Versailles, on Wednesday the 15th of December, 1886. The services were solemn and impressive, and were largely attended by the community which sincerely mourned the loss of a good citizen and a beloved physician. J. M. T.

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COMMITTEE OF ARRANGEMENTS.

The following memorandum is published by order of the local Committee of Arrangements for the information of persons desiring to attend the Ninth Meeting of the International Medical Congress, in Washington, D. C., in 1887:

RATES OF TRANSPORTATION.

Red Star Line, $100; Antwerp to New York and return.

Inman Line, $100; Liverpool to New York and return.

Hamburg Line, $90; Hamburg to New York and return.

Royal Netherlands, $80; Amsterdam to New York and return.

North German Lloyd Line, $187.50; Bremen to New York and return.

Same rates are allowed for the families of members.

Cunard Line, 10 per cent. reduction for members of the Congress only.

HOTEL RATES IN WASHINGTON.

Arlington Hotel, from $3.00 to $3.50 per day.
Riggs House, from $3.00 to $3.50 per day.
Willard's Hotel, from $3.00 to $3.50 per day.
Metropolitan Hotel, $3.00 per day.
National Hotel, $3.00 per day.

Other hotels conducted on European style will furnish rooms at $1.00 to $2.00 a day. Good lodging-houses will also furnish rooms from $1.00 to $1.50 a day.

Proper accommodations have been secured for the meeting places of the Congress and its Sections.

Transportation within the limits of the United States has not yet been determined upon, but will soon be made public. Particulars of the plan of entertainments will be published in the official programme, and all notices will be published in THE JOURNAL in due time.

Official: A. Y. P. GARNETT, *Chairman.*
C. H. A. KLEINSCHMIDT, *Secretary.*

BOOK REVIEWS.

A TEXT BOOK OF MEDICINE for Students and Practitioners. By DR. ADOLPH STRÜMPELL, formerly Professor and Director of the Medical Policlinic at the University of Leipsic. Translated from the second and third editions by HERMAN F. VICKERY, A.B., M.D., and PHILIP COOMBS KNAPP, A.M., M.D., with editorial notes by FREDERICK C. SHATTUCK, A.M., M.D., Instructor in the Theory and Practice of Medicine in Harvard Medical School. With 111 Illustrations. 8vo., pp. 981. New York: D. Appleton & Co. 1887. Chicago, A. C. McClurg & Co.

This is one of the most compact and yet full treatises

that has appeared on this subject during the last four years. The work has been very popular in Germany, having rapidly gone through three editions there. The characteristics of the work are conciseness and completeness, coupled with a presentation of the most recent and best views concerning etiology and pathology. The clinical history of diseases is clearly and well described. In many ways the treatment advocated differs from that followed in this country.

The topics taken up are described in the following order: Acute General Infectious Diseases; Diseases of the Respiratory Organs; Diseases of the Circulatory Organs; Diseases of the Digestive Organs; Diseases of the Nervous System; Diseases of the Kidneys, the Pelvis of the Kidney and the Bladder; Diseases of the Organs of Locomotion; Diseases Affecting the Blood and Tissue Metamorphosis.

The section devoted to nervous diseases is very complete and presents in a collected form the latest information pertaining to the subject.

In reading the volume through many thoughts are noticed that have not yet found their way into the American text-books generally. The author adopts freely the most advanced views of the bacteriologists, accepting as facts what in this country are regarded as still under judgment. To illustrate, the following is the first sentence under the head of etiology of acute articular rheumatism: "Acute articular rheumatism is an infectious disease. This is shown by all clinical and anatomical peculiarities of the disease; and although the specific organic pathogenic poison cannot yet be demonstrated, still this view of the disease, which was first brought forward by Hüter is the only one which enables us properly to understand its symptoms and course."

The book is a valuble addition to medical literature, as it gives us in a compact and yet comprehensive manner the best and most recent views of the most famous German physicians.

MISCELLANEOUS.

The Murphy Tenement Bill.—The New York Legislature has passed what is known as Murphy's Tenement bill. It provides for the detail of fifteen policemen to enforce the sanitary code of New York city, so far as it relates to tenement and lodging houses. The Board of Health is to make a report annually upon its work. The Mayor, one Commissioner of Health, the Commissioner of Public Works, one delegate from the Bureau of Inspection of Buildings, and the Street Cleaning Commissioner shall meet annually between Nov. 15 and Dec. 30 to consider the subject of tenement and lodging houses in New York and make such recommendations for the change of the laws as will best protect the interests of the people, which are to be made to the Governor and Legislature before Jan. 15. The bill provides that certain conditions must be observed by owners of tenements. Some of these are that where more than one family reside on a floor the halls must open directly to the outside air with sufficient windows and without obstruction to ventilation. Each tenement-house shall be provided with such privy sinks as the Board of Health may require, one for every fifteen occupants in lodging-houses, and one for every two families in dwelling-houses, which shall be plumbed properly and be adequately ventilated; all such receptacles shall be connected with the sewer by air-tight pipes as directed by the Board of Health. The law also contains a provision that every owner of a tenement or lodging-house must file with the Health Department his name and address; a description of the property by street numbers, the number of apartments, the rooms in each apartment, the number of families occupying each apartment, and the trades or occupations carried on in them. In case notices are served for the abatement of nuisances, they shall be posted five days in the house and mailed to the owner also. The law requires a semi-annual inspection by the Board of Health of all tenements and lodging-houses, and in case the owner fails to comply with the rules of the Board of Health, any court of record is authorized to issue injunctions restraining the owner. Water is to be plentifully supplied on each floor, and cellars shall be concreted and made water-tight. The bill is a long one and embodies the experience of New York sanitarians with this vexed question.—*Sanitary News*, April 2, 1887.

Medical Association of the District of Columbia.—At the regular meeting of this Association held April 5, 1887, the following officers were elected for the ensuing year: President, Dr. J. W. Buckley; Vice-Presidents, Drs. J. W. Bayne and W. O. Baldwin; Secretary, Dr. Lachlan Tyler; and Treasurer, Dr. S. S. Adams.

Chicago Medical Society.—At the annual meeting of this Society, held at the Grand Pacific Hotel, April 4, 1887, the following officers were elected for the year: President, Dr. Wm. T. Belfield; Vice-Presidents, Dr. J. H. Etheridge and Dr. A. E. Hoadley; Secretary, Dr. Frank Billings; and Treasurer, Dr. H. N. Moyer.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 9, 1887, TO APRIL 15, 1887.

Capt. Jno. J. Kane, Asst. Surgeon, resigned April 13, 1887. S. O. 85, A. G. O., April 13, 1887.

Capt. Chas. Richard, Asst. Surgeon, granted two months' leave of absence, on surgeon's certificate of disability. S. O. 82, A. G. O., April 9, 1887.

First Lieut. Freeman V. Walker, Asst. Surgeon, ordered from Ft. McIntosh, Texas, to Post of San Antonio, Texas. S. O. 45, Dept. Texas, April 11, 1887.

The Army Medical Board, New York City, N. Y., is dissolved. S. O. 82, A. G. O., April 9, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING APRIL 16, 1887.

Griffiths, S. H. P. A. Surgeon, detached from the U. S. S. "Lancaster," and waiting orders.

Hibbett, C. T., P. A. Surgeon, detached from duty on iron-clads, City Point, Va., and waiting orders.

Marsteller, E. H., P. A. Surgeon, ordered to duty on iron-clads at City Point, Va., the 20th inst.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

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ADDRESS

ON

SOME NEW ASPECTS OF THE CHOLERA QUESTION SINCE THE DISCOVERY BY KOCH OF THE COMMA BACILLUS.

Delivered before the Medical Society of the District of Columbia, March 16, 1887.

BY E. O. SHAKESPEARE, M.D.,

OF PHILADELPHIA.

LATELY U. S. CHOLERA COMMISSIONER.

I appreciate the honor of an opportunity of coming before your learned body this evening to say something, although in a desultory manner, about some of the new aspects of the cholera question since the discovery of the comma bacillus of Koch, particularly those aspects which have more forcibly struck me in the study which I have had the opportunity to make of this question during my wanderings in Europe and India, under the direction of the President of the United States, for the purpose of investigating the cholera subject, with a view of making a report to the President concerning my labors. The subject is so vast that, of course, it would be utterly impossible to speak to any extent of all the features of cholera. In fact, I can only very briefly advert to some of the points which I think worthy of bringing to your attention to-night. It is unnecessary before this Society to go much into the history of the investigations of Koch and his associates of the German Commission, or into the investigations of other Commissions which have followed him in various fields concerning this matter. At the commencement of the invasion of Egypt, in 1883 by Asiatic cholera, it has been pretty well agreed, as you know, by most of the medical world, including the gentlemen, who, under the direction of the Marine Hospital branch of this Government, made an investigation and a most valuable report of the last cholera epidemic in this country—that of 1873—that the disease was in all probability due to a specific action of a specific virus, which in all probability was of material form, which had a natural habitat in some part of India, and was exotic in the rest of the world. They regarded cholera as a contagious or an infectious disease; that is transmittible from man to man and, therefore, transportable from place to place in various ways. So that, when Koch undertook to discover this specific germ he did nothing more than endeavor to bring before the eyes an object which already was believed to have an existence.

And, notwithstanding the fact that various microorganisms in past years had been found associated with cholera, because of the fact that Koch was the recognized leading bacteriologist of the world—with the exception perhaps of Pasteur—and because of the fact that in all of his announcements to the medical world of his previous discoveries he had universally, as I understood without exception, received a wide confirmation of the announcements which he had made. Therefore more than a usual degree of expectancy was created by the mission of Koch to Egypt and India, with a view of undertaking an investigation of the etiology of cholera. When his announcements were made, in various bulletins to his Government, of the discovery of a peculiar organism in the dejecta of cholera patients, with characters enabling one to distinguish it readily from all other micro-organisms; and when he announced at the same time that this micro organism was not to be found in any other disease, and therefore constituted a reliable diagnostic sign indicative of Asiatic cholera, many medical men throughout the world were already predisposed to accept these announcements as at least worthy of serious investigation. The result of his discoveries confirmed the conviction of those who believed in the existence of a living contagium as the cause of cholera, regarded cholera as a contagious or communicable and a transportable disease, and also thought that in order to prevent visitations of the rest of the world by cholera, some quarantine measures and other means of prevention, as absolutely necessary to be enforced.

The English Government was being most interested in the question of quarantine, and held—especially their representatives in India—that there is nothing contagious about the disease, that it is no more transmittible from place to place than malaria, and that measures of quarantine, and other restrictions are not only useless, but unjustifiably harmful to the conduct of trade between the East and the West. That Government was, therefore, naturally the first to send out another Commission to the scene of Koch's labors, for the purpose of reëxamining his investigations. As you know, that Commission returned to London in due time, and published a report in which not only the conclusions of the German Commission were contested, but almost every detail of the report of that Commission was flatly contradicted; at the same time the report of the British contained indirect statements—I should rather say contained statements which indirectly supported the

assumption very widely entertained by high officers of the British Government, and particularly those in India, of the non-infectiousness of cholera dejecta. Following this contradiction many others occurred in due course, but is not necessary for me here, nor have I the time to relate them.

The United States Government, being as much interested in the question of the etiology and the prevention of cholera as any other by reason at least of its sixty millions of inhabitants (a number almost twice as great as the inhabitants of any European country outside of Russia), concluded that it would be advisable to have the grounds of these differences of opinion investigated by one of their own representatives.

I went to Europe in the fall of 1885, when cholera was almost ended there. It was, however, still existing in the City of Palermo, and in some parts of Spain. I went to Palermo because that was the largest field of investigation at the time, and I remained there until the epidemic ceased. From there I went to Spain by way of the Italian and French Riviera, stopping at different places which had been visited by cholera in 1884 and 1885, for the purpose of examining into their hygienic condition, and of learning something of the history of the epidemic in them. I reached Spain when cholera was no longer existing in that country—that is, acknowledged officially as existing—except in the south, along the Straits of Gibraltar. I had ample opportunity to make bacteriological investigations concerning the relation of the comma bacillus of Koch to Asiatic cholera, as well as the relation of other germs to that same disease, as also opportunities to inform myself concerning the grounds of difference between Koch and his opponents as regards matters of fact. These opportunities also were somewhat extended by my visit to India. I had no difficulty whatever in confirming the statements of Koch with regard to the constant existence of the comma bacillus, in certain stages of Asiatic cholera in the dejecta of patients suffering from that disease; and in confirming also his statements as to the distinctive characteristics of the bacilli distinctions, which enable one to separate them readily from all other micro-organisms known up to the present time.

As you know, the comma bacillus of Koch is a curved organism, and you know also that other curved bacilli have been found in various localities and in various diseases. The statements of Dr. Lewis, of England, were among the first announced against even the assumption of Koch for the diagnostic value of his comma bacillus. He found a curved bacillus very much resembling, under the microscope, the comma bacillus of Koch in the normal secretions of the human mouth. Curved bacilli were also found in the intestinal contents of diarrhœa and dysentery patients, in leucorrhœal discharges, in ordinary river water, in well water, in sewage water, and what not. I myself, before I had paid much attention to the bacteriological study of the question of cholera, had met with them in the exudation of the lungs of pneumonia patients, had seen them in diarrhœa, in leucorrhœal discharges, and also in river water. I found even a curved bacillus once in some broken-down beef broth which had been exposed to the air of my laboratory.

The peculiar characteristics of the gelatine tube and plate cultures of the comma bacillus and of some of the other curved bacilli, such as the Finkler and Prior bacilli, which were found by these authors in the dejecta of cholera nostras, and the curved bacillus found by Deneke in decomposed cheese are fairly shown both in the photography and the camera-leucida drawings. These appearances in the plate and tube cultures, as you see, enable one to easily distinguish between the various growths.

I can only say that I agree entirely with Koch as to the diagnostic value of the comma bacillus, and therefore disagree with the conclusions published in the first report of the English Commission, with Dr. E. Klein at its head. I would say at this point that I regard this as the most important point of Koch's investigations. In the discovery of a reliable and an easily applicable distinctive means of diagnosis of Asiatic cholera at the very first moment of invasion of a locality or a country, I consider that Koch has conferred upon the human race an inestimable benefit for, with the proper application of this means of diagnosis, health authorities and Governments will now more than ever before have it in their power to prevent an invasion of cholera, and cut short the spread of an epidemic. The value of this discovery, as I have said before, I consider incalculable.

But, as to the other part of the claim of Koch—for his claim is two-fold—in the first place the discovery of a reliable diagnostic sign, in the second place, the discovery of the active agent or cause of Asiatic cholera—I think there is still reasonable ground for doubt. The fact that, so far as we know at present, there are none of the domestic animals which are naturally susceptible to this disease makes it difficult to settle the question as to the pathogenic power of the comma bacillus by means of experimentation upon animals. It is true, that a *quasi* cholera has been and can be readily produced in Guinea-pigs, and according to some also in dogs and rats, by the inoculation of these animals with pure cultures of the comma bacillus of Koch; but there is lacking the complete chain of symptoms with which we are familiar in genuine Asiatic cholera in man. The vomiting is usually absent, and also the diarrhœa; nevertheless, a cyanosis, or algidity, and sometimes the cramps, and the death of the animal with the well known characteristic intestinal contents are met with after the inoculations. I myself have performed numbers of these inoculations and satisfied myself as to that point. But still there is a question—at least in the minds of a great many—as to whether the symptoms following inoculations of these germs are really those of Asiatic cholera or not, and on that account it seems to me that the question of pathogenesis of cholera must for a time remain open. In the course of my remarks I shall have occasion to say something about the results of the human inoculations which were extensively performed in Spain, with cultures of the comma bacillus.

I will remark here, that I found in my visit to India, a very good explanation of some of the differences between the English and the German Commissions as to the diagnostic value of the comma bacillus. Koch distinctly states in all of his communications (and every one who has had any experience in the investigation of this matter knows it to be true) that by means of morphology alone it is absolutely impossible to distinguish between the comma bacillus and various other curved organisms. As you will see by some of those photographs and drawings which have been handed round, there is no great difference as to shape and the size between the comma bacillus of Koch and the bacillus of cholera nostras, or that of Finkler and Prior, and the cheese bacillus discovered by Deneke; and I may say the same of the new curved bacillus of which I spoke, or of those found in the normal mouth, in river water and elsewhere. No man more positively states this than Koch himself, even in his very first communications about the matter. He most distinctly stated that it is absolutely necessary for the recognition of the comma bacillus, and the separation of it from other micro-organisms, that plate cultures and tube cultures in flesh-peptone-gelatine be resorted to. Without this means it is utterly impossible for anyone, even Koch himself, to distinguish between these various curved bacilli. The great fault, as we consider it, in the investigations of the English Commission in India, as refers to this matter, is that they did not seem to have fully appreciated the necessity of resorting to gelatine cultures for the purpose of distinguishing the micro-organisms which they were examining; in fact, in Calcutta where most of their observations were made, as far as I know they did not resort to any sort of culture of these micro-organisms, but relied entirely upon the microscopic examination of simple cover-glass preparations. After leaving Calcutta, and on their way homeward stopping at Bombay, it appears that they did resort to some cultures in Agar-Agar. But Koch had already explained, and every one who has since that time practically worked in the matter, knows that there is no characteristic of the colonies of the comma bacillus in Agar-Agar plate cultures which enables them to be safely distinguished from the other curved bacilli. So that the method of examination of these micro-organisms followed by the English Commission was virtually inadequate to distinguish between them and the others. They erred, to my mind, in assuming that every curved bacillus which they found in the intestines of cholera patients or in other diseases, or in tank water and other places, were to be regarded as really the comma bacilli of Koch. On their return to England, these faults were pointed out by one of the most distinguished bacteriologists of that country, Mr. Watson-Cheyne.

The head of the English Commission has recently published a communication, although not of the same official character as his official report to the British Government.

While Dr. Klein still adheres to his denial that the comma bacillus has any causal relation to Asiatic cholera, he admits now, as I understand, the mistake which he had previously made in stating that in gelatine plate and tube cultures the comma bacillus had no characteristic which would enable it to be distinguished from ordinary germs of decomposition. That statement he has withdrawn; and he has practically admitted the diagnostic value of the comma bacillus of Koch for the purpose of recognizing Asiatic cholera and distinguishing it from cholera nostras, malignant malaria, and other diseases.

I now drop the subject of bacteriology and come to another point which had been more or less overlooked in an extraordinary way up to the time of the present epidemic, although scattered observations appear here and there in the history of the subject—observations, I may say, however, made by the most distinguished writers on the subject. I refer to certain peculiarities which have been noticed in the course of cholera in individuals, in villages and in countries. James L. Bryden was the first to point out the periodicity of epidemics of cholera in India, but did not undertake to explain it except by the influence of the monsoon. Subsequent investigators of cholera in India have also noted this periodicity. The periods of recurrence of cholera epidemics in different parts of India range from three to four years as a rule, whilst the periods of recurrence of small-pox vary from five to six years. For the provinces outside of the endemic area, there is a very marked periodicity and a very considerable similarity between the rise and fall of cholera and of small-pox. Charts showing the annual mortality from cholera in the other provinces strikingly indicate the periodical character of epidemics of cholera in various sections of India.

This periodicity has attracted the attention of many investigators, although the fact seems to have passed by without any general notice, and yet it seems to be closely connected with the explanation of some of the important peculiarities of cholera in India as well as elsewhere. It has been noted in India, for instance, that instead of cholera advancing down the course of the rivers it invariably travels up them in certain countries. In the Eastern part of India in the epidemic years cholera travels up the Ganges toward the northwest, instead of moving down stream. The movement of an epidemic down the Ganges to Bengal is unknown in the history of cholera in India; the only part of Hindostan where it often goes down with the current is in western and southern India.

Another remarkable and hitherto unexplained fact is that cholera dies out in the localities visited without having smitten the whole population; and the further fact that where large percentages of the inhabitants of a place invaded by cholera flee to a distance and subsequently return to their homes before the epidemic has entirely ceased, the ravages of the epidemic continue mainly among the returned refugees; in other words, among the people who have not become subjected and habituated to the cholera influences which are still prevalent in the town to which they return is still more inexplicable. Then again there is the strange fact that a recurrent

attack of cholera is an extremely rare thing. It is indeed so rare that very few people whom I met with in the countries where they severely suffered from cholera, had ever seen a recurrent attack of it in the same epidemic. Recurrent attacks in a second epidemic are not extremely infrequent, but it appears to be quite as rare to observe a recurrent attack of cholera during the same epidemic in a person who has recovered complete health after his first attack, as to see such a thing in scarlet fever or measles, or I might say also, in small-pox.

In speaking of these questions I might refer to the researches of my friend, Dr. John L. Keating, of Philadelphia, who is greatly interested in the diseases of childhood, and who, at my request, kindly looked up some records regarding early recurrences of scarlet fever and other infectious diseases for use in my official report. I regret that time does not permit me to lay before you the valuable table which he has furnished, but I will read you a portion of his letter accompanying it, as follows: "I may say that as a rule all the zymotic diseases protect from recurrent attacks, or at least have a tendency to lessen the severity of these recurrences, the exceptions which prove the rule occurring very frequently in each disease." "In my table I have not included the relapses which are most frequent in typhoid fever, but I have only mentioned those attacks that have been followed by restoration to health, and in which after a shorter or longer period of time there has been a recurrence of the disease; measles present these peculiarities oftener than any of the others, but it is by no means uncommon in variola, scarlet fever and whooping cough." In his table, in the main relating to well authenticated early recurrence of scarlatina, many instances of recurrence in two or three weeks of attacks of scarlet fever and measles are recorded.

When in Spain I addressed a series of twenty-four questions bearing upon the cholera in that country to the physicians of every village in that country which had suffered from cholera in 1885. Among those twenty-four questions was one which requested the physician to inform me whether he had any personal knowledge of a recurrent attack during the same epidemic; if so, to give me the details. Among the large number of replies to the 2,500 letters which I thus addressed, I received only eight which related to recurrent attacks. Six of those eight recorded, according to the details given in the letter, appear to have been *relapses* before the establishment of perfect health, after imprudences in diet, and imprudences of other kinds, rather than recurrent attacks of cholera, and the number was thus reduced to two, which may have been genuine recurrences or have been attacks of cholera morbus (or nostras).

The French Academy likewise addressed a series of questions to the villages in France which had suffered from cholera in 1884, and one of the questions in their circular letter bore upon the same point. In the replies received an account of ten recurrences (or relapses) the distinction between relapse and recurrence was not made in their replies.

These are matters which have attracted the attention of some of the most distinguished observers, and caused them to admit an immunity following an attack of cholera, as you will notice when I cite some of the history of the opinions of authorities upon this point. Among the early writers is Moreau de Jonnes (1832) who said that: "If a few rare or doubtful cases are excepted, it (cholera) does not attack the same individual twice, although he finds himself under the same condition as when he contracted the disease." Dr. Sámano, of Spain, in 1858, declared that "genuine cases of relapses are few, and recurrences are still more rare," and Lebert, one of the most distinguished investigators of his time, firmly believed in the immunity which an attack of cholera confers.

Many of the International Health Congresses discussed this matter, particularly that of Constantinople in 1866. They distinctly admitted in their conclusions, adopted by a unanimous vote, that there is a certain amount of immunity which is produced in a town by a visitation of cholera. Speaking of the pernicious effects of crowding together of people, they pointed out as an amelioration that an habituation to the choleraic influence and the experiencing of choleraic attacks counterbalance these bad effects; and they said the same of crowds upon ships. The next in order of time (1868) is Griesinger, who distinctly stated that next to good hygiene and pure water, an attack of cholera is the greatest protection against the invasion. Colvin, (in 1879) although he distinctly expressed as his conviction that there is no such thing as immunity against an attack of cholera, in the course of his book refers to facts which most positively support the assumption of an immunity, particularly in the history he gives of cholera in the Crimea during the war, and in the accounts of some military epidemics.

In later times, 1883, Dr. Proust, the distinguished hygienist of the University of Paris, as also Fauvel, another distinguished hygienist of France, after a thorough discussion of the facts of the subject, most positively declare that there is an immunity following an attack of cholera, more or less lasting, as there is with the other infectious contagious diseases, and they class cholera in the latter category. Dr. Proust ends his remarks on that subject thus:

"Indeed the facts newly acquired by science relate to questions of immunity and illuminate them from a side heretofore unknown.

"The etiology and prophylaxsis of cholera in particular may deduce from it (immunity) new indications.

"These facts moreover, appear to be the expression of a law which embraces the whole of another special category of pestilential diseases due to a contagium and leaving after them an immunity more or less lasting."

Griesinger, Wunderlich and Pettenkofer, in their "Cholera Regulation," most unequivocally affirmed the existence of an immunity of considerable duration and force. And lastly, we come to Koch, who in the discussions of the cholera question before the recent Berlin Cholera Conference, after relating the facts upon which his conclusions were based, most positively expressed his acceptance of an immunity, more

or less lasting, from an attack of cholera, and classified that disease among other zymotic diseases which are followed by immunity. He affirmed that unless the immunity theory be accepted, there is no possible way of explaining why it is that epidemics cease in a town without attacking the whole of the people who are living together under miserable conditions, and why it is that recurrences are so extremely rare, and there is no other way of explaining satisfactorily the peculiarities of the course of cholera in India, viz., the periodicity of the disease there, and the fact that it travels up rivers in the East instead of going down them. But I cannot occupy your time further in the citation of distinguished investigators who up to the present time have regarded cholera as among those diseases which confer a more or less lasting immunity after an attack, and I shall be obliged to leave unsaid much of that which I intended to speak.

I have spoken of the immunity which follows an attack of cholera. I believe immunity to be as certain a sequel of cholera as it is of most of the other zymotic diseases. Otherwise it is impossible to explain why it is that a person in the early part of a long epidemic suffers the disease and recovers, with his digestive apparatus in a miserable condition, perhaps with chronic dyspepsia and chronic diarrhœa for weeks and even months, and yet that person, living under the same conditions under which he took the disease, passes through the epidemic free of a second attack, especially so in view of the fact, as is well known, that in a person who is not already protected by a previous attack, digestive disturbances are very sure to dangerously increase the predisposition to an attack of cholera. And yet, as I have pointed out, it is the rarest thing to meet with a second attack of cholera in the same person in the same epidemic.

This brings me to the question of the Ferran anticholeraic inoculations. The German Commission stopped with the announcement of their belief in the immunity which follows cholera, not dreaming of making any practical applications, notwithstanding their reference to the practical use of this immunity which the Indian Government makes in their directions for the government of the troops during epidemics of cholera. I allude to the standing orders to select the nurses from the native population, and especially from that which has recently experienced an epidemic of the disease. Ferran, as you know, became notorious throughout the world from his announcement of a preventive inoculation against cholera. Previous to this announcement, I may say, that Dr. Ferran was regarded in Spain as one of the leading, if not the most prominent bacteriologist in the country, he having been awarded a year or two before a gold medal by one of the medical institutions in Madrid, for researches relating to bacteriology. His reputation as a bacteriologist and as an earnest, reliable investigator was such, that when the cholera broke out at Toulon, he was selected by the Government of Barcelona as the head of an official Commission to go to Toulon for the purpose of investigating the cholera, and reporting officially. His first communication on the subject of inoculation was addressed to the municipality of Barcelona, and some time after his return from Marseilles and was referred to the Royal Academy of Medicine, of Barcelona, which is regarded in Spain as perhaps the most distinguished medical body in that Kingdom, for their judgment of the report. That medical body appointed a Commission to investigate the grounds of Ferran's claim. The investigation ran through two or three months, comprising experiments by Ferran performed before them upon Guinea pigs, the making of cultures, and the performance also of human inoculations, to a certain extent, among the members of that Academy mainly. The report of that Academy was confirmatory in most respects of the announcement of Ferran, and it was this report upon the Ferran question which first reached and excited the interest of the rest of the world.

The French Government, among the first, as also the Belgian, sent a Commission to Spain to investigate the grounds of Ferran's claim. Upon their arrival in Spain they laid down a programme for Dr. Ferran, but he refused to follow it, suggesting, on the other hand, one of his own for them to follow. The result, as you know, was that the official investigation of the Commissioners ended before it began, and the Commissioners went back to their respective countries, much chagrined, and reported unfavorably Ferran. Still, the medical profession and the public of France were not quite satisfied with this report, and another Commission was sent, with Dr. Brouardel at its head associated with two other physicians, one of them a recently graduated medical student, who was selected mainly on account of his knowledge of the Spanish language. (Neither Dr. Brouardel nor the other Commissioners were able to speak Spanish, and none of them, by the way, were bacteriologists, however distinguished they are in other respects.)

The second Commission met with pretty much the same reception as had the first, and undertook to enforce the same sort of programme which the first had attempted to lay down for Ferran, and with no better results. After breaking off negotiations with Ferran, the second French Commission undertook to collect the statistics then existing (they were in Valencia in the summer) of the results of the human inoculations which were being so extensively practised by Dr. Ferran. In the meantime, however, the Spanish Government itself had appointed three Commissioners to investigate the Ferran question, and those Commissioners had reported that the inoculations were harmless, and that they were made with pure cultures of the comma bacillus of Koch, thus exploding many widely published statements to the contrary, and recommended that they be continued. The statistics collected for and presented to the Minister of Commerce of France by the second French Commission, and the criticisms which have been made concerning them, are practically the only quasi-reliable data which the rest of the world had of the results of the inoculations in Spain. The objections raised against the statistics obtained by Dr. Brouardel (such as they were, strongly in favor of the claims of Fer-

ran), were that they were not detailed enough; that they did not have any real official character, and that they were collected by the partisans of Ferran. The judgment of the world (myself among the number) of course naturally was most uncomplimentary to Dr. Ferran and to his anti-choleraic inoculations. When I reached Spain, however, I found that by that time the official statistics had been collected, and that they had been collected not by the partisans of Ferran, but by the representatives of the Spanish Government, who from the known history of the Ferran question in Spain, at least, cannot be accused of being friends of Ferran.

The Provincial Governments are somewhat peculiar in Spain in that these Governments change with the changes of the Cabinet at Madrid; so that the Provincial Governors always reflect the sentiments of their respective ministers at Madrid. It is no secret in Spain, but very well-known that the Ferran inoculations received no favor, and in fact, active hostility from the Minister of the Interior at Madrid, and the same sentiments towards Ferran personally, and towards his work, were reflected among the political officials throughout the various provinces in Spain, wherein the inoculations were practised. The same also may be said with regard to the Governments of the municipalities; they were also subject to the political influences of the Provincial Governments, and therefore also to those of the Government at Madrid. The Spanish Government ordered at the time of the appointment of the second Commission, that official and careful statistics should be collected concerning the Ferran inoculations, by the usual or by special officers for that purpose. In this manner provision was made for the collection of official statistics, which, by the way, had been collected and published some weeks and months after the publication of the unofficial statistics obtained by the Brouardel Commission. The official statistics are signed and attested in the first place by the physicians of the villages where the inoculations occurred; in the second place, by the municipal judge; in the third place, often also by the president judge of the judicial district in which the village is located; in the fourth place, they are attested by the Curé of the parish; in the fifth place, by the secretary of the municipality, and by the mayor; and lastly, they are attested by the notary public of the district. So that, of official formality, there seems to be no lack.

These official statistics, whatever value they may otherwise have, cannot now be subjected to the same charge which Brouardel made, very justly, against those which he obtained. They still lack detail in many respects, usually failing to indicate the social position and the hygienic surroundings of the persons attacked or inoculated. Such as they are, however, they seem very strongly to support the claim of Ferran that there is an immunity against cholera, produced by the inoculations of the comma bacillus of Koch. The nature of these statistics is such, and their results so striking, notwithstanding their great faults, that it now seems to me imperative that Governments of Europe and of this country, and serious scientists throughout the world should re examine this whole matter for the purpose of getting at the real truth of the question as to whether there is or is not an immunity produced by the inoculations of cultures of the comma bacillus of Koch.

I referred a few moments ago to these inoculations, being the only ones which were made with the comma bacillus to any extent in the human subject. Ferran himself, and one or two other investigators, as a basis for attempts at inoculation in man, claim to have produced immunity in the inoculated guinea-pig. I may say just at this point, that I was very much surprised in India in an interview with D. D. Cunningham, the celebrated cholera authority there (known throughout the world for his investigations), who told me most positively that he had produced such a condition in guinea-pigs which he had inoculated hypodermatically with cultures of the comma bacillus of a certain amount, that it was impossible to kill the same pigs with subsequent inoculations which in fresh guinea-pigs would prove certainly fatal. This is, perhaps, the most important confirmation which the statement of Ferran concerning an immunity produced in animals by means of inoculations by the comma bacillus of Koch, has yet received. I mention this point for what value it may have. I refer to it also as an interesting matter, because it shows that Dr. Cunningham who, after the departure of Koch from India, set himself to work seriously to investigate the relations of the comma bacillus to cholera has radically changed his views concerning Koch's discovery since prosecuting those investigations. From an opponent he has come to be a strenuous advocate of the first part of the claim of the German Commission; that is, that with the comma bacillus we have found a reliable means of diagnosis of Asiatic cholera.

Now I will say, after this short digression, a few words about the result of the anti-choleraic inoculations in Spain, and then will close, feeling that I have already held your time too long.

The published official statistics comprise reports from twenty-two villages in Spain where the inoculations were performed, having among their inhabitants 30,491 inoculated, leaving 104,561 not inoculated. Among the inoculated there were 387 attacks, or 12.69 per thousand, and 104 deaths, or 3.41 per thousand, giving a mortality of the attacked of 26.87 per cent.; whilst among the non-inoculated there were 8,406, or 80.28 per thousand, and 3,512 deaths, or 33.50 per thousand, giving a mortality of the attacked of 41.80 per cent. Now these figures are striking, as you see. I have drawn a diagram which represents, according to the analysis of these statistics, the relative protection of the people against attacks and death by cholera insured by ordinary hygienic measures, sanitary cordons, disinfection, and other measures in vogue at the time, as compared with that of the inoculations. A short line drawn on the diagram being the unit of protection of the inhabitants in the inoculated villages against attack by cholera produced by the hygienic and other measures, this long line represents the degree of protection which has followed

inoculation: that is, a degree of protection 6.06 times greater than the degree of protection from attacks afforded by hygienic and other measures. This short line again being the unit which represents the protection from death by cholera of the general inhabitants afforded by hygienic and other measures. a longer line represents the amount of protection which, according to the statistics, seems to be afforded the inhabitants from death by cholera by the inoculations: in this case it is 9 84 times greater than the protection afforded by the usual measures of hygiene, disinfection, etc. This chart is based, I should state, solely upon the statistics furnished by one inoculation. Ferran himself claims (although the statistics are not full with regard to this point) that the height of the protection comes after a reinoculation; that one inoculation only partially protects, while a second inoculation completes whatever degree of protection there may be from the inoculation. For instance, it is a rare thing to find a death recorded among those reinoculated. Furthermore, I have not attempted to estimate the deaths among the inoculated who might have had the germs of cholera acting within them at the time of the inoculation.

I have diagrams representing the course of cholera in two villages where the inoculations were performed. In the village of Livia, where of a population of 9,460 there were 1,419 inoculated, leaving non-inoculated 8,041, among the inoculated there were 40 attacks and 7 deaths; among the non inoculated there were 561 attacks, and 354 deaths. In the village of Benifayó there is a population of 3,615, and among that number there were 2,723 inoculated, leaving 160 dead and 732 not inoculated; there were also 2,000 reinoculated. A great number of inoculations (2,315) were performed at this point in the course of the epidemic, a day or two before this sudden fall in the epidemic which you notice, and you will see that its course is suddenly brought to a termination.

Now I have made an analysis of the official Government statistics lately published by the Spanish Government of 361 villages in the province of Valencia, and in a few other provinces that were invaded by cholera, with a view of getting at the average course of the epidemic of 1885 in Spain. There were 361 villages, with a population of 996,546 inhabitants, the attacks by cholera being 88 per thousand of the inhabitants. The average duration of the epidemic in these 361 villages was forty-four days; this period was divided into a rise of fourteen days, a stationary period of eleven days, and a decline of nineteen days, the decline being longer than the rise. The epidemic in Spain in this respect coincided with the course of epidemics the world over.

I will end this Ferran matter by saying that, while I do not regard these official statistics of the results of inoculation as by any means conclusive, yet I consider them sufficient not only to warrant, but to imperatively demand that this question shall be thoroughly and scientifically investigated, a thing which has not yet been done, notwithstanding the visit to Valencia of numerous Commissions which have gone there for the purpose of investigating the matter.

When in Spain I investigated 361 villages where there has been an attack of cholera, and the following are some of the points which were brought out by that investigation: In the 361 villages cholera was introduced 211 times by persons already affected or bearing the germs of the disease within them; eighteen times by clothing; fourteen times by sick persons and soiled clothing. It was stated only once that merchandise was the means of the introduction of the epidemic, and only fifteen times did they attribute the introduction of cholera to drinking-water.

I am sorry that I have not time to speak of the hygienic condition of the people of Spain, and point out the fact that it is almost impossible for people living in the irrigated districts of Spain—which are, by the way, the portions which have always most severely suffered from cholera epidemics—to have water which is not contaminated either by their own sewage or by the sewage of villages immediately above them in the course of the irrigation canals; for these canals are used frequently not only as public sewers, when they pass through the town, but they are used also as public lavatories, and as a supply of water for drinking and other domestic purposes. And yet, in Spain and in Italy also, in studying the course of cholera, this matter is usually overlooked. In only fifteen villages did I find any reference to the possibility of introducing cholera by means of the irrigation canals in the replies sent to my inquiries.

One of the statements made by the foreign official Commissions that went to Spain reflected very severely upon the knowledge of Dr. Ferran of the rudimentary principles of histology, bacteriology and microscopy. I can only say that my personal experience in Dr. Ferran's laboratory was entirely different from that. I have photographs of some of his preparations, and I venture to say that no handsomer photographs have been made with a microscope anywhere in the world, and no more handsomely stained preparations of the comma bacillus, and no more pure specimens of the comma bacillus in gelatine have I seen in the laboratories of Berlin or of Paris than I saw in Dr. Ferran's laboratory, modest though it was, in the city of Tortosa, where he lives. I may say that, although Dr. Ferran may be mistaken, and probably is, in some of his claims, especially with regard to the morphology of the comma bacillus, and he may also be mistaken in his views about inoculation, my own personal experience with him, and what I could learn from disinterested sources in Spain from all sides, leads me to believe that instead of being the charlatan he has been represented, he is a gentleman, in the first place, and in the second place a well informed physician, an investigator, and a microscopist of no mean skill; and that whatever he may have stated about this matter of anti choleraic inoculation, it is his honest belief.

I must apologize to you, Mr. President, and to your Society, for having so outrageously taxed your patience, and also for the disconnected manner in which I have had to bring some of these important points to your notice; but it has been impossible for me to do otherwise, inasmuch as during my stay for the last three or four weeks in Washington I have been constantly engaged in the completion of my official re-

port, which I hope to be able to place in the hands of his Excellency the President soon, and I have really not had the opportunity even to properly arrange in my mind what I should endeavor to say upon this subject.

ORIGINAL ARTICLES.

PERSISTENT VOMITING DURING LABOR RELIEVED BY ANÆSTHESIA.

Read before the Medical Society of the District of Columbia, March 21, 1887.

BY SAMUEL C. BUSEY, M.D.,

OF WASHINGTON, D. C.

Nausea and vomiting at the beginning or during the progress of labor is not uncommon. When occurring during the early period it usually ceases with the evacuation of the stomach, or only recurs occasionally. In some cases the patient will vomit at long intervals until the delivery is accomplished. Such vomiting is usually regarded by the laity as beneficial, the popular belief being that "sick labors are easy labors." Obstetricians do not seem to have attached any special significance to the occurrence of such gastric disturbances during the first stage of labor; but when persistent during the second stage, producing exhaustion and lessening the activity of uterine contractions, the safety of the patient may demand immediate delivery.

The complication of labor with persistent vomiting must be very rare, as I have not found a single case reported in detail, after an extensive examination of obstetric literature. Only a few authors casually refer to the subject. The following case, though probably not a unique observation, may prove instructive, in so far as it may attract attention to the subject, and, possibly, suggest a method of treatment not previously employed.

Previous History.—The previous history of this patient is instructive and important, not only because it may offer an explanation of the persistent vomiting, but because it will introduce the details of another rare complication which fortunately did not present the obstacle to delivery anticipated. The mother of the patient was the third child of an "old Englishman and a young Irishwoman," and was the only one of a large family of children afflicted with exostoses, which were mostly located on the long bones in proximity to the joints. The patient is one of eight children of this mother, all of whom inherited this peculiarity of the osseous system. In most of these children the exostoses are located in the neighborhood of the ankle and wrist joints. They have not been observed previous to the seventh or eighth year of age, and have been believed to have followed injury to the bone or joint involved.

The patient had a miscarriage at three and a half months, November 21, 1885, while residing in one of the Territories. Her statement is that she suffered during the continuance of this pregnancy, almost constantly, from nausea and vomiting; that the pains during the miscarriage were very severe, and that the placenta was not delivered until the fourth day. For several weeks following she was confined to her bed with fever, and for three months afterwards she "had hæmorrhages from the womb," so that she was greatly emaciated and reduced in health and strength. During her illness the nurse discovered an exostosis arising from the right ramus of the pubis, midway between the symphysis and inferior spinous process of the right ilium, nearly globular in form and measuring one and a half inches vertically. The patient had been aware of the presence of this tumor from early childhood, but as it had not perceptibly increased in size, nor occasioned any discomfort, had supposed it was normal until informed by the nurse to the contrary. The nurse had also volunteered the information that, in consequence of its position, she could not give birth to a living child at term.

In April, 1886, she consulted me, at my office, with special reference to this statement of the nurse, at the same time expressing a great desire to have a child, and a willingness to incur any reasonable risk. I was quite willing to assure her that the exostosis, located as before described, would not obstruct delivery at term, but declined to express the opinion that she could give birth to a living child, at term, *per vias naturales*, unless I could have the opportunity of a careful examination of the pelvic cavity. To this both the wife and husband finally consented and, by appointment, this exploration was made two days afterwards, at their residence in this city. This examination disclosed the existence of a sharply pointed exostosis jutting obliquely upwards from the inner surface of the ramus of the pubis immediately below the external and larger tumor, measuring (approximately) three-fourths of an inch in length. The upper border of its base seemed to be on the *linea ilio pectinea*; otherwise the pelvis seemed to be normal.

When informed of the existence of this exostosis the emphatic and definite statement was made, in the presence of her husband, that she was unwilling to continue, as she had done since her miscarriage, to deny to her husband the privileges and pleasures of conjugal rights, and that her desire to have a living child was so great that she was willing to incur any danger, short of certain death. These declarations were followed by the inquiry if the bony tumors could be removed, and if such an operation would be more or less dangerous to her than the birth of a living child? To this I replied that such an operation might be performed, but that I thought the chances of survival would be less than from some one of several obstetric procedures which might be expedient in the event that she should again become pregnant.

Then followed the graver question: Could she be delivered of a living child at full term? My reply was as follows: Premature delivery at the seventh, eighth, or eighth and a half month might, under certain circumstances to be ascertained during the progress of pregnancy, be considered the wisest procedure. If permitted to go to full term Cæsarean section or one of its modifications, or gastro-elytrotomy, might be considered the proper methods.

Either of these operations might secure the birth of a living child, but would be attended with considerable danger to her. That craniotomy might be less hazardous to her than either of the other surgical procedures referred to, but the child would necessarily be destroyed. She promptly and positively rejected craniotomy, and expressed a decided preference for one of the surgical methods because they seemed to her to offer better chances for a living child. I then added that I believed, under certain favorable circumstances, she might give birth to a living child at full term *per vias naturales*. These were: a female child, a small and flexible head, a vertex presentation either in L. O. A. or R. O. P. position, or, if the presentation and position were recognized in time, the change of either the R. O. A. or L. O. P. to one or the other of those positions of the vertex, so that the head would descend with the side and not the face or occiput towards the exostosis. If the presentation should be breech the chances would be less, but not necessarily fatal to the child.

She accepted these possibilities with the greatest pleasure, and with exultation expressed her determination to take the chances with the risks. We parted with the agreement that if she should become pregnant I would receive notice as soon as she was entirely satisfied of the fact. To this I reluctantly consented, for I would have preferred to have terminated my services with the expression of my opinion and been superseded by some colleague more anxious than I to witness the possibilities of the future.

Her womanly courage proved equal to her heroic enthusiasm. Late in July I received a note from her communicating the information that she was pregnant and requesting me to call. She dated her pregnancy from the 7th of May. I found her in perfect and robust health, full of enthusiasm, and equally determined as when we parted in April. The whole subject was again calmly and deliberately discussed. I left her with the injunction to give me immediate notice of any symptom of ill-health, and especially of the first movements of the fœtus. On September 8 I was informed that the first sensation of motion of the fœtus had been felt the day before. My examination of the pelvis verified the condition ascertained in April. I could not discover any other obstacle to labor than the exostosis before described. The date of confinement was then fixed for February 7, 1887. I left her with the statement that I would not, if then, interfere in any manner before the completion of the seventh month, unless something unexpected should occur. At this visit, as at every visit made by appointment during her pregnancy, she had a severe rigor with marked trembling. Similar attacks were not infrequent, and were attributed by the patient to "nervousness." They were always relieved by a potation of whiskey without any subsequent ill effects. These tremblings, usually lasting a half-hour, were so general and tumultuous that an examination could not be conducted until they had subsided.

After a careful examination in December, during the early days of the eighth month, I concluded to defer the induction of premature labor, because I was convinced the fœtus was small, probably a female with a small head. Her health had continued, without interruption, good. She thought she never had enjoyed such health as since her pregnancy began.

January 2, 1887, Dr. J. Taber Johnson made a careful examination. We concurred in the decision that she should be permitted to go to term. This decision was accepted with marked pleasure.

Labor began at 5 P.M. on February 8, and terminated successfully at 3:30 A.M., February 9. I arrived at 10 P.M., five hours after the hour named when labor commenced. The os was dilated sufficiently to admit two fingers, and dilatable. The bag of waters was forming but not protruding. The head presented in L. O. A. position. The sutures were easily distinguished. The head was small and flexible. The pains were frequent and sharp, but ineffective. Just at the moment of greatest intensity of every pain violent retching and vomiting would set in, which ceased with shivering. The pains seemed to cease spontaneously with the onset of these complications. The patient and nurse agreed in the statement that the gastric disturbances had continued from the beginning of the pains as I had witnessed them. Her pulse and general condition were good, except that during these attacks her pulse would rise rapidly, sometimes to 120, and then subside during the interval to 80 or 90. There was also a frequently recurring, irresistible desire to pass water. Her courage was unabated, and her cheerfulness and enthusiasm were unimpaired. The bowels and bladder had been freely evacuated before my arrival. The shiverings were arrested by the usual potation of whiskey, which the nurse had refused to allow without my consent. The vomiting not only continued, but manifestly increased in duration and violence, notwithstanding my efforts to arrest it with pellets of ice, alkalies, and hot water. The matter vomited was fluid, very slightly streaked with mucus. The intervals of relief grew shorter and the pains more acutely teasing and worrying. The signs of exhaustion were shown in the more continuous frequency and feebleness of the pulse, varying from 110 to 124, increasing restlessness and anxiety, with a facial expression of suffering and tire, and constant appeals for assistance. From the time of my arrival until midnight there was no appreciable progress in the labor. The relations of the head and condition of the cervix remained unchanged.

With the end of my index finger against the most dependent portion of the bag of waters during a pain, I frequently recognized the simultaneousness of the beginning of the vomiting and subsidence of the uterine contractions, and their correspondence with the moment when the pain or contraction had reached its maximum intensity. If this observation were correct, and the method adopted correctly measured the duration and degree of the uterine contractions, no progress in the labor could be expected during the continuance of the conditions which produced the inertia. Three methods of relief were considered: rupture of the amniotic sac, a rectal injection of chloral hydrate, and anæsthesia. I determined to try the last first and, in the event of failure, each of the others in retrograde succession. At 11:50 P.M. I began the administration of the A. C. E. mixture.

The vomiting ceased; the pulse improved in force and volume, and slowed, and the pains became more direct and distinctly intermitting. After continuing the anæsthesia for three-quarters of an hour it was suspended. The vomiting recurred. The anæsthetic was resumed and not again withdrawn until the head had escaped. The vomiting did not return.

At 1:30 A.M. I ruptured the amniotic sac, and delivery was completed at 3:30 A.M., February 9. The sac was ruptured because its persistence retarded the labor. After the cessation of the stomachal complication nothing worthy of special notice occurred. During the progress of the descent of the head I examined the relation of the head to the exostosis several times. It did not present any obstacle to delivery. There was not upon any part of the child any mark of its impingement. The child, a female, weighed 7½ pounds. Her convalescence was satisfactory, except unusual thirst and hunger during the first day, and delay of milk until the sixth.

The patient was a healthy, robust young woman, bright, intelligent and cheerful, and possessing more than ordinary will-power, self-control and courage. Nevertheless, as admitted since her confinement, she was, from the beginning to the termination of pregnancy, under continuous and very severe mental strain. At times, when disturbed by some perturbating circumstance, such as a visit by appointment from me, the dominating influence of her will would lose its controlling power, hence the rigors and shiverings. These, as well as the persistent vomiting, must be regarded as nervous, perhaps hysterical phenomena. The condition of her health during the period of pregnancy excluded uræmia and every disorder of the chylo-poietic viscera which could have borne any etiological relation to the hyper-emesis. Mental strain with loss of will-power culminated with the onset of labor. The knowledge of the fact that with the beginning of the pains the travail had commenced, to which for nine consecutive months her highest and noblest aspirations, as well as the gravest forebodings, had pointed as the most momentous act in her life, was quite sufficient, even in one so courageous and self-poised, to produce some serious neurotic complication.

The causal relation of the mental condition to the persistent vomiting is affirmed by the fact that obliteration of consciousness, pain and cerebration by narcosis, arrested the stomachal disorder, which recurred upon the restoration of these faculties, but again ceased, not to return during anæsthesia, notwithstanding the contractions of the womb continuously increased in intensity and duration during the same time. The coincidence between the uterine contractions and the vomitings does, however, seem to establish the relation of cause and effect. Sick labors are usually associated with rapid dilatation of the cervix. In this case the os had dilated to two fingers' width (about the size of a silver half dollar) at the expiration of the seventh hour of continuous labor, and dilated much more rapidly after the arrest of the vomiting.

Vesical tenesmus is constantly found in connection with a rigid os, but in this case it was persistent with a dilatable os, and ceased with the vomiting during narcosis. The slowed dilatation was undoubtedly due to the arrest of uterine contraction by the simultaneous attacks of nausea and vomiting. With a dilatable os there was no protrusion of the amniotic sac, and the amount of liquor amnii was small, so that intra uterine pressure could not be considered a factor unless, perhaps, the small quantity of amniotic fluid permitted closer contact of the uterus with the irregularities of the fœtal ovoid. During the first pregnancy the patient had suffered continuously from nausea and vomiting, but during the second she had been entirely free from any digestive disorder. Thus, while I would not deny the reflex relation between the contractions of the uterus and the stomachal complication, the history of the case, and rather singular array of phenomena occurring during labor, together with the relief obtained by semi narcosis, compel me to reject it as the sole or chief element of causation of the persistent vomiting.

This case is another striking illustration of the value of anæsthesia in labor. The contractions of the uterus were concentrated and increased in power. Usually I do not commence the administration of the anæsthetic before the beginning of the second stage, but I have quite frequently witnessed a similar result when, in consequence of some perturbation, the uterine contractions seem to be ill defined, diffused, and as it were wasted. In very many cases anæsthesia expedites labor, in a few it retards it, and in very rare instances it is not well borne, and has to be withdrawn. During the past two years I have most frequently employed the A. C. E. mixture with satisfactory results. It seems to be equally effective in lessening suffering, with less narcosis.

AN UNUSUAL CASE OF LACHRYMAL STRICTURE.

BY H. D. THOMASON, M.D.,
OF ALBION, MICH.

S. C., male, aged 15 years, presented himself at my office two months ago, suffering from, and presenting all the characteristic symptoms of, stricture of the lachrymal duct. There was also a fistulous opening situated below the junction of the canal and duct, making an ugly sore, and discharging tears and pus. This stricture was of several years' standing, and had been annoying, but the fistula was recent, and it was for this that his parents brought him for treatment.

His history was not encouraging—there were strong reasons to suspect hereditary specific taint. He presented an anæmic appearance, had been afflicted with partial hemiplegia since babyhood, and for years had been the victim of severe chronic pharyngeal and nasal inflammation, accompanied with ulceration of the turbinated bones.

I placed him on anti-specific and tonic treatment, and by means of douches and sprays, nasal, post-nasal and pharyngeal, endeavored to modify the difficulty. By means of Ancl's syringe efforts were made to pass a stream through the fistulous opening and the lower punctum into and through the duct, but

unsuccessfully. The fistula, however, healed, but an absolute stricture remained. With a set of Bowman's probes, I decided to dilate the stricture. The patient was of such a nervous temperament that nothing could be accomplished unless under an anæsthetic, which was always employed when the probes were used. The lachrymal canal was thoroughly laid open to its junction with the duct, and a No. 1 probe inserted. This was arrested at a point a little below the junction, but by gentle perseverance this point of resistance was passed. Other slight obstructions were overcome, until, when estimated to be within one-twelfth of an inch of the final termination, an obstinate obstruction was encountered, which conveyed the impression it was an obstruction of bone, and which successfully resisted the further passage of the instrument. A No. 2 probe was easily passed to this point and then arrested. A few days later, again placing the patient under an anæsthetic, beginning with a No. 2 probe, Nos. 3 and 4 were successively passed to and arrested at this same point.

Then, after passing all the set of probes, including No. 8, and being unable to get beyond this obstruction, an instrument was ordered and made by Chas. Truax & Co., of Chicago, of the form and diameter of a No. 8 Bowman probe, but armed with a steel drill at the distal extremity. A regular No. 8 probe was passed to the obstruction and withdrawn, in order to open as well as could be the tract, and the armed probe entered. There was a little difficulty experienced in passing it, owing to the disposition of the sharpened edges of the drill to catch in the membrane, but patience and perseverance overcame this, and the obstruction reached, several rotary motions of the drill were made, and there was no difficulty in detecting when the bone was perforated. The drill was withdrawn, a No. 8 probe passed the entire length without difficulty. The patient experiences great relief, and is in a large measure free from the troublesome symptoms attending a lachrymal stricture.

Albion, Mich., April 16, 1887.

A NOTE ON TANNIC ACID AS A SURGICAL DRESSING.

BY T. J. HUTTON, M.D.,

OF FERGUS FALLS, MINNESOTA.

Tannic acid forms an excellent dressing in three classes of wounds, viz.:

1. Incised wounds—applied after the sutures are inserted, or adhesive plaster is on—if the wound does not require stitching.

2. Small wounds of irregular form and recent occurrence.

3. Wounds of moderate size in compound factures. Wherever applicable it excels all other dressings in the following respects:

1. Convenience.
2. Cheapness.
3. Cleanliness.
4. Efficiency.

It is always ready. It costs but a trifle. It requires no greasy mixing, measuring or muddling and has neither smut nor smell. While of its efficiency I can only say after sixteen years use that I am satisfied: I ask nothing better. I first called attention to this neat, choice dressing in an article entitled "Fifty Fractures in Mining Surgery," which appeared in the *Medical and Surgical Reporter* for September, 1878.

The method of application is simply to keep the wound covered with the powder. Wounds thus treated heal on the average in about one-third of the time required for similar ones treated by liquid, oily or salve dressings. In converting compound fractures into simple fractures by this method, the flesh wound is often healed in one-twelfth of the time required to heal it by wet dressings or salves that are frequently removed and re-applied. Illustrations are unnecessary if I have clearly defined the classes of wounds in which this dressing is applicable. Although hundreds of cases thus treated could be adduced that would prove interesting reading, I will describe the last case only in which this dressing was employed:

F. J., aged 16, German, on January 26, 1887, was struck by a falling tree. Next day he was brought to my office. There was a semi-circular scalp wound six inches in length over left parietal bone, and a fragment of this bone almost the size of a silver quarter dollar, stuck up trap-door fashion. The flaps had shrunk wide apart and were swollen and angry, as the injury had occurred twenty hours previously. The whole wound looked bad, being full of hair, dirt, serous effusion, chips, leaves and brush-wood. The patient was very feeble, but conscious. A dose of whisky and hot water was administered and the wound douched for one hour with warm carbolized water. When the bony fragment had been gently depressed almost to normal position, (I could not succeed in reducing it to the normal level) the scalp-wound was sutured with horse hair. Tannic acid was then applied, and directions given that it be dusted on freely every few hours, more especially if moisture should appear over any part of the wound. A laxative was administered, also small doses of aconite and bromide of potassium.

The flesh wound healed by first intention. No fever ensued; the pulse never exceeded 92. The patient went home on the 31st—the fourth day of treatment, and two weeks later his father reported that he was "all right."

April 9, 1887.

MEDICAL PROGRESS.

INFLUENCE OF ALTITUDE ON PHTHISIS.—SURGEON MAJOR NATHANIEL ALCOCK says: The explanations hitherto offered of the action of altitude upon phthisis amount to three: greater expansion of the chest from aerial rarefaction; absence of bacterial organisms from the air and general tonic effect.[1] Were the first of these effective, some improvement would be expected to follow the use of gymnastics at lower levels; of the second it may be said that every consumptive carries his own microbes with

[1] The Lancet, Jan. 8, 1887.

him; and the third is too vague to need discussion. It may therefore be assumed that no satisfactory explanation has as yet been suggested. The specific organism of tubercle has an established identity; consequently the disease must be ranked among the special infections and its aggravation or arrest must depend upon the fertility or sterility of the microbe to which it is due.

Pasteur, in his splendid researches on the poison of splenic fever, has shown that "splenic fever can never be taken by fowls; in vain are they inoculated with a considerable quantity of splenic blood." "Now, the temperature of birds being between 106° and 108°, may it not be," said Pasteur, "that the fowls are protected from the disease because their blood is too warm? A hen was taken, and, after inoculating it with splenic fever blood, it was cooled down to 100°. At the end of twenty-four hours the hen was dead. Again, a hen was inoculated, subjected like the first to cooling, and when the fever was at its height it was wrapped in cotton-wool and placed in an oven at 95°. In a few hours it was fully restored to health. Hens killed after having been thus saved no longer showed the slightest trace of splenic organisms." Thus it is proved that the microbe of one of the most virulent diseases reaches its condition of highest life and greatest reproduction in blood at a temperature of about 100°, but that in the same blood at 107° it ceases to exist. Presumably, then, if the subjects of some forms of bacterial infection could survive a proportionate elevation of temperature, they too would overcome the poison.

The question here arises, Are there any conditions in which the blood of a living man can be made to assume the molecular action equivalent to a temperature of 105° while the animal heat remains at 98°? Clearly such is quite possible by diminishing atmospheric pressure while the temperature remains fixed. We know that it would be quite impossible to boil water at the sea level with 199° of heat, but if the water be removed to St. Gothard, 6808 ft. high, boiling will at once take place. Professor Thomson, in his opening address at the British Association, said: "It is scarcely possible to help anticipating in idea the arrival at a complete theory of matter, in which all its properties will be seen to be merely attributes of motion." It is already accepted that the only difference between the liquid and gaseous states is that of a molecular motion. Consequently, if 199° of heat can make water boil at St. Gothard, it is apparent that this temperature can there produce an amount of molecular motion which not less than 212° could excite at the sea level. Further, as 199° is to 212° so is 98.4 to 104.8°; therefore the rate of molecular motion to which a temperature of 98.4° would give rise at St. Gothard could only be attained at the sea level as the result of a temperature of 104.8°.

Professor Clifford has shown that "the energy of the single particles is always proportional to the temperature of the gas," provided the pressure remains unaltered. Consequently, since the condition of every organism is but the aggregate of its ultimate atoms, if a man whose temperature at the sea level is 98.4° be removed to St. Gothard, it is evident that both the gaseous and liquid molecules in his blood must attain a rate of motion corresponding to what would have been produced at sea level by a temperature of 104.8°. But the experiment of Pasteur has demonstrated that the optimum temperature of certain infecting organisms is about 100°, and that when the vibration-rates equivalent to 106° or 107° are communicated to their constituent molecules, disorganization follows. Hence, it is intelligible that, if a consumptive patient whose temperature at sea level is 98.4° be raised to an elevation of 6000 ft., such alteration of molecular motion will take place in the blood as to be incompatible with the healthy existence and effective reproduction of the tubercular microbe; in fact, the patient will be placed in the position of the bird to the splenic fever poison. If this reasoning be sound, wide is the vista with regard to the epidemic levels of yellow fever, malaria, cholera, etc., which it must open up, and strange the possibilities which might result from the artificial production of the required conditions.—*Lancet*, March 19, 1887.

Treatment of Boils by Injections of Carbolic Acid.—Dr. Bidder, of Paris, has described a method of treating furuncles by parenchymatous injections af carbolic acid. If the boil is a small one, he gives one injection of a few drops of a solution of carbolic acid (2 per cent.); if it is of median size, two injections are given, the half or the whole of a Pravaz-syringeful of the solution being used on each occasion. In the case of large furuncles, for example, half the size of a man's hand, Dr. Bidder injects at four different spots the contents of four Pravaz syringes half or wholly filled with a solution of 2 per cent. of carbolic acid. These injections are given only once. This treatment is strikingly successful. There is some smarting at the seat of injection at first, but the pain soon disappears, and the next day there is a marked improvement in the patient's condition. The inflammatory swelling subsides very quickly, and in eight or ten days even the largest furuncle is dispersed. By this plan no unsightly scars are left, a circumstance, which in many cases is of considerable importance. The success of the treatment is probably to be accounted for by the fact that either the microbes which cause the disease are killed, or the medium in which they flourish is destroyed—*British Medical Journal*. [This treatment has been in use in America for almost ten years.]

Hypnone.—Von Schüder writes of fourteen patients treated by hypnone, in whom favorable results followed. A dose of from 2 to 4 drops was sufficient to produce sleep of several hours' duration; the effect was especially happy among the phthisical. No ill effects were observed. In one case only, after 6 drops had been given, the patient awoke from a long sleep with headache and slight vomiting. The effect dependent upon the dose and individual peculiarities was manifested after from one-half to one and one-half hours.—*Der Pharmacent*, Feb. 1, 1887.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

The Editor of this Journal would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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THE IRRADIATION OF MOTOR IMPULSES.

If a man perform work with the muscles of, for example, his right hand exclusively, and to the point of fatigue, can he thereafter perform as much work of the same nature, with the left hand as he could if the right hand had not been previously exercised? Such is the question discussed by Dr. N. A. Randolph before the College of Physicians of Philadelphia on March 2. The question does not relate to a comparison of the work of the two hands, but to an examination of the work which may be done by one hand as conditioned by the previous exercise or non-exercise of its fellow; and it is clear that the answer to question depends solely on intracranial processes, and that the answer would throw light on the functional independence or interdependence of the two halves of the brain. And to answer the question two conditions are prerequisite: the subject of experiment must be ignorant of the object of the investigation, as otherwise he will be unconsciously a partisan of one hand, and there must also be a strong inducement for him to exercise his volition to the utmost.

Suitable subjects were found in the persons of some of the more vigorous and intelligent convicts in the Eastern Penitentiary, the stimulus being a money prize to the one who performed the most work in a given time. In the first series of experiments rubber-bulb syringes, identical in all their measurements, were used, the work performed being estimated by the amount of water which the men could transfer from one vessel to another in a given time. The uniform result of some forty observations was that either hand could do more work when its exercise preceded than when it followed the similar exercise of its fellow. "It was found, however, that the muscular effort could not be entirely restricted to one side of the body in this method, as great fatigue was always accompanied by a grimacing and writhing which implicated the muscles of both sides of the face and trunk." In the next experiments a Morse telegraph instrument was used, the muscular movements being restricted to an up-and-down motion of one finger of each hand, the number of such movements in a given time being recorded on the telegraph slip as dots or dashes, in accordance with the rapidity of contraction and relaxation of the flexors of the fingers. The results of these experiments were uniformly confirmatory of those in the first experiment; but the method caused such eye-strain in counting that it was abandoned. A clock-work instrument was then made, so that the records could be made on a dial and easily noted. Six subjects were used, and to each was given fifteen minutes in which to make his record with, for example the right fore-finger, after which the left fore-finger was similarly exercised. The same process was repeated on the following day, but beginning with the finger of the hand used second on the previous day.

These results were also practically uniform. "The man who for fifteen minutes flexed and relaxed his right forefinger with the greatest speed possible to him would, on the following day, accomplish on an average, nearly 10 per cent. less work with that finger when its exercise was consecutive to a similar exercise of the forefinger of the opposite side, than when its work was initial." As a rule, more work was accomplished by the simultaneous exercise of the two forefingers than by their successive exercise. In such simultaneous exercise of both hands, apparently from some unconscious effort at rhythm, it was seen that the movements of the left forefinger were generally more active and rapid than when used alone. This is in accordance with experience of many pianists. It will be seen that these facts are closely related to the observations of Weir Mitchell and Morris Lewis in regard to the knee-jerk. It will be remembered that they have shown that the knee-jerk is reinforced by any voluntary movement in any part of the body, and that this reinforcement is apparently due to such an irradiation of motor impulses from the active centres to other similar centres, as placed them and their related muscles in a condition of heightened responsiveness to external stimuli. Dr. Randolph's experiments seem to confirm this, and show that fatigue of one centre may induce a sympathetic fatigue in other centres. These

observations further suggest that the centres for volition, attention and coördination are not, as regards their functional activity, bilaterally symmetrical and independent; that is to say, "these functions have not attained complete differentiation into right and left will, attention, or coördination; that, probably, the first effect of the voluntary activity of a portion of one cortical motor area is a stimulation of the corresponding portion of the other hemisphere—a stimulation that may result in its slightly premature fatigue; that apparently more work can be effected through the voluntary simultaneous exercise of two such portions of the motor apparatus than by their independent exercise one after the other."

Can we explain Dr. Randolph's facts by saying that the overflow of energy on to symmetrically related centres, or on to others, is competent to weaken them without being strong enough to cause motion? Dr. Weir Mitchell inclines toward the use of the overflow theory to explain the lowered capacity for work by one hand after exhaustion of the other. It will explain why in consentaneous use of two symmetrical parts more work is done than when they follow one the other. The overflow would be in this case valuable, and not damaging or wasteful. He referred to the fact, which he and Dr. Lewis have established, that "When we use the maximum power of one hand on a dynamometer, the coinstantaneous use of the other hand adds nothing to the result; and this form of experiment has been commonly used as a test of the reinforcing capacity of the opposite member. If, however, using two fingers, or the grip of the thigh adductors, on the bulb of a mercural dynamometer until great exhaustion occurs, and we then make a new effort at the moment of violent use of another member, the mercury leaps quite to the level attained during the first effort by unfatigued muscles. It does not seem easy to explain this fact, except by assuming that the overflow of energy usually wasted is in this case made efficient."

This experiment brings up the question of muscular and ganglionic tone. When we strike the patellar tendon, a sudden, distant, voluntary act adds reinforcement. What happens to the muscle or ganglion so influenced? Is it made more sensitive to impressions, or is there with this a slight flow upon it of motor energy? And if so, can we measure the effect, and thus influence what we conceive of as muscular tone? Dr. Mitchell has been engaged in discovering if these reinforcements do cause motion —*i. e.*, a slight preparatory muscular contraction making the subsequent volition, or other excitatory activity, more potent in its results. He has been able, so far, to prove that in some spastic cases distant muscular effort, such as a grimace, really causes distinct and measurable movement in the extensors of the thigh and presumably elsewhere. But it is not yet clear whether in *normal* man remote motion is thus capable of causing slight shortening of all other muscles. We often speak, says Dr. Mitchell, of nerve power as if there were a common stock from which are drawn the supplies needed by every active organ, and reason that it is unwise to try to carry on at once two functions which exact large expenditures—as digestion and intense thought, or digestion and exercise. Practically the difficulty may be one chiefly of blood supply. This is illustrated in the not rare fact that some feeble people cannot digest except when at rest. These facts suggest the idea that perhaps Dr. Randolph's cases would lose 10 per cent. of mechanical capacity after a period of exhausting mental labor or during digestion.

In regard to the old theory for explaining the principle of counter-irritation, that there is a certain amount of nerve force in the system, and that when by means of counter-irritation the nerve force is drawn to a distant point, it is removed from the inflamed part, we may agree with Dr. H. C. Wood that, while modern science does not recognize the truth of this theory, it looks as though there is a certain amount of truth in it. "Every one who has worked in a gymnasium will recall the fact that he cannot use the two hands simultaneously with the same force as he can when the two hands are used separately. This shows some relation between the nerve centres which we have not as yet got at." It would seem that when we use our muscles vigorously, two kinds of fatigue are produced; a local fatigue and a general fatigue. If a man uses the right arm vigorously, he not only fatigues the right arm, but also the whole body. Dr. Wood believes that if these investigations are continued, it will be found that after prolonged use of the leg, there will be loss of power in the arm, perhaps as great as after previous use of the other arm. As suggested by Dr. Mitchell, "the relation between muscular exertion and mental exercise should be studied. Each one knows by personal experience that when mentally fatigued he is incapable of performing the usual amount of physical labor. This is probably independent of any question of overflow, and goes back to the higher cerebral centres and their relation." As suggested by Dr. Mills, it is a well-known clinical fact that an old hemiplegic, if examined carefully, will be found to have not only the decided loss of power and

accompanying conditions resulting from the lesion on the opposite side of the brain, but also a certain diminution of strength in the limbs of the other side; a condition which is not entirely due to the general loss of physical power present. The phenomena exhibited in certain cases of unilateral spasm seem also to be related to this subject.

Experiments such as those of Dr. Randolph are not only of great interest in connection with pure physiology, but also in connection with psycho-physiology, or physiological psychology, which is now receiving more and more attention, and on which Prof. Ladd, of Yale, has recently written a most valuable book.

ANNUAL REPORTS OF PUBLIC HOSPITALS.

The twenty-sixth annual report of the Cincinnati Hospital, which has just been laid on our table, reminds us of the many and great advantages that would result, if all public hospitals for the sick and injured were required to make full annual reports, for which the one before us would afford an excellent pattern. It is a neatly printed pamphlet of only 78 pages, yet contains a concise description of the hospital buildings; full list of the officers, medical staff, resident physicians and nurses; complete financial statement of all receipts and expenditures, including every item of quantity and cost; the number of admissions and discharges, medical, surgical, obstetrical and gynæcological, with the particular disease or accident affecting each patient, and the results of the treatment; and also the total number treated during the year, the average time in the hospital, the total cost and the average cost per day per patient. If every public hospital containing fifty or more beds would publish annually a complete official report on the model given us in the twenty-sixth annual report of the Cincinnati Hospital, we would soon have the materials and data for solving many important problems, both economical and medical much more satisfactorily than at present. Enough can be gleaned from the few, and often important, reports of hospitals now furnished to the public, to show great differences in the expenses per patient in different hospitals, even when located in the same city, and apparently receiving the same class of patients; and almost as much disparity in the results of treatment, both in the general aggregate and in relation to particular diseases. Thus in one hospital the total cost per day for each patient is given at about $1.20 and in another at only 0.67\frac{7}{10}$. In the report of the Cincinnati Hospital the net cost per patient per day is given for each year from 1868 to 1886 inclusive, and varies from 47.7 cents to 72.6 cent. The percentage of deaths to the whole number of patients was 6½, that of typhoid fever alone nearly 17, and that of pneumonia 45 per cent.; while in another hospital the ratio of deaths from typhoid fever is only 5 per cent. and from pneumonia less than 15. A series of official reports from the public hospitals of different cities would enable us to explain these important differences, and deduce practical lessons of much value.

AMERICAN PUBLIC HEALTH ASSOCIATION.

The preliminary circular announces that the next annual meeting of this important organization will be held in Memphis, Tenn., November 8, 9, 10, 11, 1887. The Executive Committee have selected the following topics for special consideration at the meeting: *a.* The Pollution of Water-Supplies; *b.* The disposal of Refuse Matter of Cities; *c.* The disposal of Refuse Matter of Villages, Summer Resorts and Isolated Tenements; *d.* Animal Diseases Dangerous to Man. No more interesting or important topics could be selected for the thorough study of the Sanitarians of this country at the present time. All papers intended for this meeting should be plainly written or printed, and be in the hands of the Secretary at least twenty days before the date of the annual meeting. Notwithstanding the enumeration of the topics mentioned, it is understood that papers of merit on other subjects will not be excluded. George M. Sternberg, U. S. A., Baltimore, is President, and Irving A. Watson, Concord, N. H., Secretary.

American Surgical Association. — The next annual meeting of this organization is to be held in Washington, D. C., commencing May 11, 1887, and is expected to continue three days. The preliminary programme contains a list of many papers, furnishing interesting topics for discussion. Hunter McGuire, M.D., Richmond, Va., is President, and J. R. Weist, M.D., Richmond, Ind., Secretary.

State Medical Society of Wisconsin.—The next annual meeting of this Society is to be held at Oshkosh, commencing on Tuesday, May 3, at 8 o'clock P. M. Reports of such a number of Standing and Special Committees are expected as to make a full amount of interesting and profitable work for the meeting.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, March 2, 1887.

The President, Jos. Taber Johnson, M.D., in the Chair.

Dr. S. C. Busey read a paper entitled

PERSISTENT VOMITING DURING LABOR RELIEVED BY ANÆSTHESIA.

(See page 484.)

The President stated that he had seen the cases reported by Dr. Busey and would confirm his statements. He suggested that in addition to the subject for discussion mentioned in the paper, the subjects—"Exostosis as a Complication of Labor," and "Anæsthesia in Labor" be discussed.

Dr. L. Mackall said that he had recently attended a case of labor in which the use of anæsthetics had not only proved efficacious in relieving very distressing nausea and vomiting but also promoted a speedy delivery. He was called in January last to see Mrs. C—in her second confinement. Arriving between 10 and 11 o'clock P. M., he found the os dilated to the extent of a silver dollar, and dilatable; the bag of waters protruding; the vagina relaxed and the pains recurring at short intervals but not expulsive. Up to this time nausea and vomiting were not present, and from the favorable state of the patient he anticipated a speedy delivery. She soon began to complain of sick stomach, which became distressing, with frequent retchings and diminished frequency of pains.

He found upon examination about an hour after his arrival that labor had not only not advanced but that the soft and dilatable os had become rigid and unyielding. During the next two hours there was much sick stomach and frequent emesis of mucus and water. The pains were diminishing in strength, were not all expulsive. Between 2 and 3 o'clock A. M. he made another examination and found that there had been no advance in labor and that the os was quite as rigid as before.

He felt convinced that the irritable stomach and the tardy labor were due to a too great determination of nerve force to the solar plexus, thereby depriving the hypogastric plexus of the requisite amount of force necessary for the accomplishment of labor, and that in order to overcome this abnormal state he had either to administer by the stomach some agent capable of relieving the overcharged nerve center, or would have to resort to an anæsthetic, which by its action on the cerebro spinal system, would probably withdraw nerve force from the solar plexus to the cord and that then a due determination to the hypogastric plexus would take place. He resolved, in order to accomplish the desired end, to try first a cupful of crushed ice given as rapidly as could be swallowed, as he had previously learned that ice so administered not only allayed gastric irritability, but quickly promoted efficient uterine contractions and prompt delivery. In this connection, he felt it incumbent upon him, to again make special reference to the good effect of ice when properly administered in labor attended with inertia, and he was satisfied, that many cases occurred where, if it had been administered, the use of forceps might have been dispensed with. He could recall a case where uterine contractions had ceased almost entirely, although large and repeated doses of ergot had been given, and the application of the forceps seemed inevitable, but before using them, he gave a large teacupful of ice as rapidly as could be swallowed, with the result of restoring efficient pains and a rapid delivery.

In the case under consideration, however, the crushed ice failed to accomplish a good result, so he determined to put the patient under the effects of the "A. C. E." mixture. Six or eight inhalations, during pains, reduced her to partial unconsciousness.

After the first inhalation there was no recurrence of the nausea or vomiting, and the character of the pains quickly changed, becoming strong and expulsive. The os was found to have lost its rigidity and to be rapidly dilating, and in a half hour the child was born. Contraction of the uterus promptly followed with expulsion of the placenta without hæmorrhage.

In referring to a statement made in Dr. Busey's paper, that nausea and vomiting were regarded by many as favorable to the progress of labor, Dr. M. stated that this might be true if the vomiting resulted from reflex action due to a rapid dilatation of the os, but that in those cases this condition should be regarded as the effect not the cause. In other cases where the nausea, vomiting, pyrosis, etc., resulted from great irritability of the stomach, caused probably by a sudden determination of nerve force to the solar plexus, he had found that no favorable or decided progress was made until these symptoms were relieved by appropriate treatment. Indeed he rather dreaded such cases, for he then anticipated that probably many hours must elapse before the patient and doctor would be relieved.

Dr. L. Eliot related a case also attended by vomiting. When called he found the os dilated and every evidence that the labor was progressing. After trying various remedies without effect, tincture of iodine finally controlled the vomiting, but the pains ceased. He had her sit up in bed for awhile and in two or three hours she was delivered.

Dr. J. F. Hartigan has used anæthesia in cases of tedious labor with satisfaction. We should be cautious in its use and the selection of the anæsthetic. For instance, the primary effect of chloroform was upon the heart, while ether is known to have produced hæmorrhage from the air passages and lungs. The "A. C. E." mixture, he thought, was the safest and most popular.

Dr. L. Mackall referred to the recently published article of Dr. Fordyce Barker upon the subject, in which he claims that chloroform is perfectly safe.

The President remarked that he preferred chloroform in labor, and that he used it in perhaps seven-tenths of his cases. He only used it, however, ex-

cept in operative procedures, when the patient asked for it, and he began giving it in the latter part of the second stage. He puts twenty to thirty drops on a handkerchief and allows the woman to inhale it herself just as a pain is coming on. In this way she gets enough to dull her sensibility to pain, but not enough to keep her unconscious between whiles. In a large number of cases there may be a few instances in which anæsthesia has retarded labor enough to make the forceps necessary, but he does not think that it will produce post-partum hæmorrhage. On the contrary, the restlessness and exhaustion produced by a long labor without relief is much more likely to cause hæmorrhage than the chloroform. He prefers chloroform to ether in heart or kidney disease.

Dr. T. C. Smith thought that anæsthesia did sometimes help post partum hæmorrhage.

Dr. Busey has seen hæmorrhage follow anæsthesia, but he did not attribute hæmorrhage to it, but rather to protracted and exhausting labor. Chloroform was safer than ether, but the "A. C. E." mixture was superior to any. Narcosis was not so profound as by the former while it is just as effective in relieving pain. Although anæsthesia is a great boon in midwifery, it may sometimes prolong labor instead of expediting it.

Stated Meeting, March 16, 1887.

The President in the Chair.

Dr. D. S. Lamb presented the specimen and read the history of

A CASE OF OSTEOMALACIA.

Dr. Mary Parsons reports the following history: Charlotte J., white, single, Virginian, seamstress. In November, 1865 (she was then 47 years old), while walking home one day, she was suddenly seized with severe pain in dorsum of left foot; this was found to be swollen and reddened. The pain continued through the night. The late Dr. W. B. Magruder was called in the morning. After careful examination he failed to find the cause of the trouble. The pain, redness and swelling recurred at intervals for two years, sometimes preventing sleep and finally interrupting her work. In the autumn of 1867, after an unusually severe paroxysm, lasting several weeks, she fell and sprained her left ankle, for which she was treated by the late Dr. S. B. Blanchard. She kept her bed several months and never resumed her regular occupation, but did some sewing at her house. She was able to get about the house with comparative ease and sometimes walked short distances. About a year later she had a second fall and another severe sprain of the same ankle, after which she walked with much difficulty and had constant pain. In 1872, unable to earn her living, she was admitted to the Home of the Women's Christian Association. She then walked with a cane, waited on herself and took care of her room. November 15 she was sent to Columbia Hospital. She had then constant pain in her left leg and ankle, pain along course of post-tibial nerve, and some œdema about the ankle. Treatment seemed of no benefit. Dr. J. Harry Thompson removed a portion of the nerve at the seat of the severest pain. Wound healed by first intention, but no relief followed. She returned to the Women's Home. She now went on crutches and with great difficulty; pain more severe. Six weeks afterwards she had an unusually severe paroxysm of pain in the foot, which was reddened and swollen; she was put to bed and never left it again in fourteen years. During this time she had constant and severe pain, sometimes excruciating; she became emaciated and anæmic; the toes of the left foot became flexed, finally causing ulceration of the under side of the foot; foot œdematous, œdema extending to knee. Diet generous, her fancies gratified, but she never improved in her general condition. She often had "drawing" pain in the foot, and just before a storm extending to the thigh; and spasm of the leg which gradually diminished as the disease progressed. For several years she did fine needlework and depended on conversation for pastime, being unable to read. About 1881, she had irido-choroiditis of left eye, which recurred sometimes in one eye, sometimes in the other, and at times in both. In December, 1885, an ulcer appeared on the right cornea, and perforated; eye removed by Dr. S. M. Burnett. During these years the pain steadily increased, the foot rotated outwards, and in 1885–6 the leg rotated outwards at the knee. The œdema increased and the limb became a shapeless mass. For the last six months of life she could not lie down because of the "drawing" pain. Her pains increased much in stormy weather, and this led many physicians to diagnosticate rheumatic arthritis. Her appetite became capricious, constipation obstinate, urine scanty and loaded with urates. Through her later years she was a marvel of patient endurance. Died June 15, 1886.

Necropsy by Dr. D. S. Lamb: Body much emaciated; bedsores on buttocks; right eye had been removed. Right lower limb œdematous; left, flabby; linear white scar on inner side of left ankle; eczematous scabs above ankle; muscles of limb showed fatty atrophy; bones of thigh, leg and foot atrophied, the atrophy increasing from above downwards. The compact substance was thin, porous and very friable; in some places so soft as to be cut with a knife without turning its edge; the cancellous substance appeared as plates and fibres loosely held in a mass of white granular matter, largely composed of fat, in some places of a gelatinous appearance, filling all the medullary canals and spaces. Brain showed increase of subarachnoidal fluid; cysts of choroid plexus. Old pleuritic adhesions both sides, especially at apices, under which was fibroid induration; both lungs showed red and gray hepatization in lower lobes. Heart normal: aorta and pulmonary artery congested on pericardial surface; aorta showed fatty degeneration. Liver somewhat atrophied; gall bladder full. Spleen somewhat atrophied. Pancreas normal. Stomach normal. Small intestine full of flatus. Large intestine contained much soft fæces which excessively distended the rectum. Right kidney cirrhotic; surface showed many minute aqueous cysts and about

a dozen prominent yellowish masses, size of pinheads and larger, which on section turned out granular matter; at lower end of kidney was a sarcoma, size of small walnut, encapsulated, and slightly encroaching on kidney tissue; mulberry calculus, weighing 10 grains, found in pelvis. Left kidney cirrhotic; small superficial aqueous cysts. Right suprarenal capsule of usual size; left not noticed. Bladder normal. Uterus and appendages atrophied. Lower aorta and common iliac arteries showed chalky plates. Left external iliac artery normal; no obstruction. Lumbar glands normal.

The history and necroscopy of this case correspond so closely to those of mollities ossium or osteomalacia that I am inclined to that diagnosis.

The disease is very rare. Dr. Fagge, in his "Principles of Medicine," 1886, states that he had seen but one case, and that in the care of his uncle, Mr. Hilton, at Guy's Hospital, in 1864. Ten out of every eleven cases occur in the female sex, and two out of every three in women, either during pregnancy, shortly after parturition, or about the time of the climacteric. The age is usually between 25 and 35, rarely under 20 or over 50. The cause is speculative, although many cases seem to have a dependence upon dampness. The earliest symptom is pain, varying in seat and character, sometimes "wandering," and then leading the physician to the diagnosis of "rheumatism." Lassitude, irregular appetite and constipation are usual symptoms. Gradually locomotion becomes difficult and the patient is very liable to fall. In consequence of falls, and, indeed, sometimes even on slight motion, fractures occur, with little or no tendency to heal, and accompanied, therefore, by deformity. Eventually the patient is confined altogether to bed, becomes emaciated, exhausted, and dies. The duration of the disease is usually four to six years, but cases are recorded of its terminating in death in three months, and again lasting for eight, ten, or even fifteen years; in the case now reported, nearly twenty-one years. I see no reason why it may not endure for any period within the ordinary limit of life.

Why the bones should be thus decalcified and softened, so that they can be readily cut with a knife, is not yet clear. Lactic and carbonic acids both have been assigned as the causative factors. No excess of phosphates or carbonates of lime is found in the urine except incidentally; although, as in this case, calculi are found in the kidney and bladder in many cases. The inorganic portion of the bone may be reduced to 30 per cent., the diminution in lime being much more relatively to that of its combining acid. The compact tissue may become a mere shell; the cancellous tissue sometimes seems like medulla, of a deep red color with ecchymoses; sometimes yellow, soft and fatty; sometimes mucous and translucent. This softening may cause deformity of the female pelvis and thereby difficult parturition; and the softening of the ribs may be so extreme as to stop respiration. The disease differs from rickets in this: rickets is due to a failure to deposit the calcareous salts; osteomalacia to the removal of the salts after deposition.

DR. E. O. SHAKSPEARE, of Philadelphia, then addressed the Society upon

SOME NEW ASPECTS OF THE CHOLERA QUESTION SINCE THE DISCOVERY BY KOCH OF THE COMMA BACILLUS.

(See page 477.)

CHICAGO GYNÆCOLOGICAL SOCIETY.

Stated Meeting, Friday, February 18, 1887.

PHILIP ADOLPUS, M.D., IN THE CHAIR.

(*Concluded from page 472.*)

DR. A. REEVES JACKSON exhibited

TWO DERMOID CYSTS OF THE OVARY.

Case 1.—First seen by me May 27, 1884. Julia C., aged 40 years, was married at twenty, had one child two years later, and no other pregnancy. Commenced menstruating at 17, and was regular after the first year. Always had good health. Five month ago, weighed 176 pounds. Three and a half months ago she took a long walk in the evening, while menstruating. After her return she had a slight chill, and severe pelvic pain, the latter chiefly referable to the bladder, micturition frequent and painful. She seemed never to recover her health; vesical symptoms continued, appetite and nutrition failed; she became rapidly emaciated; a swelling appeared in the lower abdomen; menstruation appeared regularly and without pain. She could not walk, but rode out in a carriage. A few days before I saw her she rode out, with enjoyment, but returned fatigued and soon began to vomit. Her upper extremities moved involuntarily, and there was a complete loss of power in the lower ones. A "metaphysician" was called to see her and gave the assurance that there was no bodily ailment—the mind only was at fault. The assurance was repeated twice a day by the Christian scientist, who on these occasions sat out of sight of the patient, the headboard of the bedstead separating them. However, the patient and her friends thought she was getting rapidly worse, and I was asked to see her. At the time of my visit she was lying in bed on her back. Her hands and arms were in constant motion; she seemed powerless to keep them still a moment; she could make no co-ordinate movements, indeed had no control whatever over either the upper or lower extremities; the latter were, however, motionless. The functions of the bladder and bowels were voluntary; the tongue dry and covered with a brownish coating; there was great thirst; pulse 110, small and almost imperceptible at the wrist. The temperature was not observed. She was very restless, and had not slept more than ten minutes at one time during the past three days. At short intervals she vomited a greenish, frothish, tenacious fluid. On examination I found the abdominal walls soft and free from tenderness on pressure. There was a feeling of doubtful fluctuation with dulness at the sides, also in the right iliac region. The higher parts of the ab-

domen, as the patient lay on the back, were resonant. She died the following day, and in the evening an autopsy was made with the assistance of Drs. Brower, Danforth and E. Ingals.

On opening the abdomen we found besides other evidences of acute inflammation the exudation of perhaps a quart of pus. As this was being removed it was discovered that its source was a partially collapsed cyst, which still held about one pint of pus, and from the opening through which the pus came there protruded a few hairs. This fact settled the diagnosis. The woman had died of a ruptured dermoid cyst. The kidneys showed evidence of chronic disease. The cyst with the ovaries and Fallopian tubes, was removed. Here I show you the opening, which was somewhat enlarged after the autopsy for the purpose of freeing the inner portion of the cyst. In addition to the hair there were also some rudimentary teeth and some plates of bones which I sent to a pathologist for examination, and received from him a photograph showing the bony constituents of the cyst. Apparently all of the dermoid tissue was centered in this space. The amount of hair was large, as you see. This was matted together in the usual manner, and has been freed from the sebaceous matter which accompanied it by shaking it in ether. This is a miniature switch made by an artist in such matters from a portion of the hair. These dermoid cysts, of which I have now seen three, possess great interest to me, pathologically. I confess to not understanding them, so I asked Professor Fenger to be here to night, and he promised to bring some additional specimens and to talk about them.

Case 2. Dora B., 35 years old, wife of a physician residing at Normal Park. Saw patient on February 10, 1886. Married fourteen years; two children, age respectively 11 and 7 years; also two abortions, one three years and the other two months since. Nine months ago, while lying on her back, patient noticed a swelling the size of an orange in the right iliac region. It was soft, smooth, movable and insensitive; has slowly encroached on the opposite side; five days ago, after sneezing, experienced a sharp attack of pain in pelvis which lasted twenty-four hours, keeping her in bed. I found on examination an abdominal tumor occupying the hypogastric and right iliac region, extending upward as high as the umbilicus, and into the left iliac fossa. On February 23, she entered my Infirmary, and the tumor was extirpated on the 25th. It weighed about eight pounds. There was a main cyst, containing a limpid serum, and inside of this a smaller cyst about the size of a mandarin orange, containing bone and hair. This tumor possesses an interesting feature that I have never observed before in either of the cases I have seen. It is this, there are two distinct kinds of hair, one of an auburn color, very curly, portions of which are still attached to the part, and two tufts springing from other portions of the rough, orange-rind like skin, which are long and straight, quite free from curl, and of an entirely different color. The kinds of hair that I have seen from other specimens, while they have usually differed in color from the patient's hair, have always been uniform throughout. In the first case I saw, several years ago, the hair was thirty-six inches long. In that case, the part from which the bony substance and hair sprang were in one part of the tumor, occupying a small space. The patient had carried this for many years without symptoms. Finally, it commenced to grow and formed a tumor sufficiently large to attract her attention. There were two cysts. The first one was a very large one, containing a semi colloid matter very much resembling soft soap, and in great abundance. Separate and distinct from this there was a cyst not larger than a goose's egg, soft, and which could be indented readily, and when it was opened there came out a mass of hair together with other dermoid characteristics. So it seemed that the cyst which contained the fluid and made the growth perceptible was secondary, and this fact would account for the clinical fact of these patients carrying a tumor for many years without any impairment of health, until an additional cyst is formed, that may present any of the characteristics of an ordinary ovarian cyst.

Dr. Christian Fenger made some remarks on

DERMOID CYSTS OF THE OVARY,

with illustrations from specimens:

In entering upon the question of the dermoid cysts of the ovary, I wish to call attention to the two theories of their origin. According to Heschl, dermoid cysts in general owe their origin to isolated islands of the epiblast, displaced during embryonal development and located somewhere in the territory of the mesoblast. This theory of fœtal inclusion did not explain the origin of the dermoid cysts in the testicle and ovaries. It was not until his had shown that the internal genital organs are developed from a part of the embryo, the so-called "axenstrang," in which all the germinal layers are included, that we were able to understand the presence of dermoid cysts in those genitary glands.

The second theory of the origin of dermoid cysts in the ovary is the view of the older authors, recently adopted by Waldeyer. Epithelial cells of the ovary, capable of transformation into the ovum with all its formative possibilities, may enter into an irregular formative activity and produce a dermoid cyst—a process almost analogous to a partheno-genetic development, as Ohlshausen states it. This second theory would only explain the origin of dermoid cysts in the ovary, and would not enable us to understand their presence in all other parts of the body. Consequently, it seems more natural to accept the Heschl-His theory, as this gives a satisfactory explanation of the origin of dermoid cysts in general, and is in conformity with Cohnheim's theory of the origin of all other new formations, from an isolated group of embryonal cells, dormant until the unknown cause of the new formation calls them into formative activity.

A dermoid cyst is always a monocyst, and if, as is seldom the case, we find more than one in the same ovary (Ohlshausen in one case found three), we may expect to have had more than one embryonal matrix,

from each of which a cyst has developed, the one independent of the other. It often appears as if a dermoid cyst of the ovary were a multiple one, but closer examination will prove that we have before us a combination of a dermoid cyst and a proliferating cystoma, or more rarely a dermoid cyst with multiple local colloid degeneration of the stroma of the wall. Cystic transformation of the sweat glands —extensive cysts to the size of a fist—was seen in one case by Friedländer.

I shall not go any further into the subject of the dermoid cysts here, but only present to the Society three specimens removed by laparotomy within the past year, and will call attention to the points of interest illustrated by each one in particular.

Case 1.—This specimen, at the time of the operation the size of a fist, now much smaller from shrinking in the alcohol, was removed from a girl of 20. There was no difficulty about the removal, but I am sorry to say the patient died from acute sepsis thirty-six hours after the operation. Besides the sebaceous matter and the hairs, which you have already seen in Dr. Jackson's specimens, we find in dermoid cysts very commonly—in from 20 to 50 per cent. of the cases—teeth inserted in the soft dermoid wall or in pieces of bone contained in the latter, or finally, free in the contents of the sac. As a rule, there are only a few teeth in a cyst; but Schnabel has seen, in a case of a girl of 13, over 100, and Autenrieth describes a case in a 22-year-old woman, in which 300 teeth were removed and as many more left in the cyst. As Ohlshausen states, it is impossible to understand the presence of such numbers of teeth without the explanation that, the same as in children, multiplication of the enamel germ takes place, and a set of milk teeth are followed by a set of permanent ones. That this is more than a mere theory is proved by a specimen in Rokitansky's collection in Vienna, in which there is seen a milk tooth with the root absorbed down to the crown by atrophy from pressure of the overlying permanent tooth. Spencer Wells, in his "Ovarian Tumors," states that he has seen one similar instance. In the specimen before us this fact is illustrated to perfection. From the soft parts on the surface of this little piece of bone, in the wall of the cyst, you see attached a tooth corresponding in shape and size exactly to a temporary incisor of the upper jaw. I have made an incision through the gum, if we may use that expression, and, as you see, the root is absorbed almost down to the crown. When we turn this milk tooth to the side, we see the crown of the overlying tooth. This is larger, and has the exact shape of the corresponding permanent incisor.

Case 2.—The next specimen is a very large dermoid cyst, from the left ovary of a woman at 50. It filled the whole abdominal cavity up into the cardia and gave the exact symptoms of a proliferating cystoma or multiple cyst, as there were felt, besides the main cavity, harder, lobulated portions, which I supposed to be smaller and more tense cysts. As she gave the history of a cyst which ruptured when she was 14 years old, causing months of suffering from peritoneal symptoms and then disappeared, not to return until after the age of 45, I thought that a dermoid cyst was out of the question. At the operation, which was difficult on account of many adhesions and the nature of the contents of the cyst, I found this very large dermoid cyst, containing—(a) Three or four gallons of a brownish fluid, in which floated hundreds of thousands of round, yellowish-white, small bodies, the size of a hemp seed up to a pea. I pass round a sample of them in these two glasses. These bodies are soft, have the consistency of butter and are found under the microscope to consist of irregular masses of amorphous fat, with pavement epithelial cells interspersed here and there, single or in groups; (b) A yellowish-white, butter-like mass the same as the small bodies if matted together, filling up entirely some of the chambers of the cyst, with no fluid mixed with it. This peculiar arrangement of the fat is rare. Rokitansky saw in a cyst seventy bodies the size of a hazlenut, and very many the size of a pea swimming in a brownish fluid. Routh, according to Spencer Wells, saw a similar case, the balls showing under the microscope concentric layers of amorphous fat around a nucleus of cholesterine crystals. Franekel, cited by Ohlshausen, found the whole contents of a dermoid cyst to be numerous hard, mostly round or irregular balls, consisting of amorphous fat, fatty degenerated epithelial cells and hairs. The shape of the cyst is peculiar, inasmuch as it gives the appearance of a conglomeration of cysts, But close inspection shows that all of these communicate with each other so as to form one large, though very irregular cavity. Thus, in reality, we have before us a monocyst, characteristic of the dermoids, as I mentioned before. In the wall, however, we find a number of smaller cysts the size of a pea to a hazlenut—these do not contain the same fatty material as the main cyst, but a colloid mass, and are due to secondary colloid degeneration in the wall of the latter. The inner surface of the large dermoid cyst shows in some places irregular masses of bone imbedded in the wall, and further, as in Dr. Jackson's cases, the following condition: We do not find typical skin with hairs, sebaceous glands, epidermis, and so on everywhere on the inside. This is found on only part of it, forming one or several irregular islands. The remainder of the cyst wall is smooth, has the characteristics of an ordinary cystoma, with a single layer of epithelial, cuboid, or cylindrical cells. It may be that the dermoid portion of the wall secretes the fat and the cystoid portion mainly a serous or albuminous fluid. Movements of a cyst containing at the same time a thin serous fluid and sebaceous matter might (Rokitansky) shape this suspended fat into the small round masses just the same as butter when in the process of churning. However, if this was the right explanation, it appears, that this peculiar formation is seen only in very exceptional cases. The right ovary was transformed into a dermoid cyst the size of an orange. Notwithstanding the dermoid cysts on both sides, the woman had a number of children, the youngest 16 years old at the time of the operation. The patient never rallied from the shock of the operation, and died twelve hours afterward.

Case 3.—The third specimen is a dermoid cyst taken from a girl of 23. It was noticed for about one year and a half before the operation, at which time it was one and a half times as large as a child's head. There was no particular difficulty about getting it out. When I opened the abdomen and came on the cyst it was transparent, so that I did not think it was a dermoid cyst, and I inserted a Köberles trocar, which, of course, we should never do in dermoid cysts if we can help it. Immediately the trocar was stopped up by what I found later was a mass of hairs and sebaceous matter, so that I had some difficulty in keeping the abdominal cavity clean. However, she recovered without any greater trouble than a little abscess in the abdominal wall from one of the sutures.

Before demonstrating the specimen I wish to make a few remarks in regard to malignancy of dermoid cysts. As a rule, we regard a dermoid cyst as a benignant new formation, and a malignant character is here a rather rare exception. We make a distinction between malignancy of a dermoid cyst, *per se*, and malignancy from a combination of dermoid cysts with carcinoma or sarcoma. The malignancy of a dermoid cyst as such is very rarely seen. Kolaczek relates a case, operated upon by Martini, in which, besides a common dermoid cyst with a perfectly smooth surface, there was found in the walls of the peritoneal cavity small nodules in great number, the size of a millet seed and of a yellowish color. Many of these little tumors had a light-colored hair sticking out from their centres into the peritoneal cavity. Similar were seen in a case operated upon by Billroth, reported by Fraenkel.

Malignancy of a dermoid cyst from combination with carcinoma, sarcoma and myoma. These tumors originating in the tissues of the cyst are not so very seldom met with, and have been observed more commonly of late years, because a more minute microscopical examination is made now than in former years. Ohlshausen mentions as bearing upon this subject, a statement of Doran, that he had seen in several instances malignant tumors of the abdominal cavity follow extirpation of dermoid cysts. On examining the main wall of the specimen before us, we find on the dermoid island with its hairs and a plate of bone in the wall, the following unusual formations:

(a) A large black mole. It is of irregular lobulated shape, two by three inches in diameter, slightly elevated over the surrounding skin, and has a velvetty uneven surface without hairs. Microscopic examination shows the common structure of pigmented moles, which, as you will remember, has a great similarity to that of a sarcoma.

(b) A papilloma the size of a pea. You will see it outside of the mole on the skin over the bony mass. It is surrounded by a thick wrinkled skin beset with hairs. On transverse section it shows a solid centre covered with the pointed excrescences, resembling exactly a large wart with long papillæ, as we sometimes find them on the skin of the hand. A detailed microscopic examination and description of all the specimens is not as yet finished, but I intend to give it in a future discussion. It is sufficient, however, here to call attention to the important bearing, the two benignant new formations found in this cyst have upon the malignancy just spoken of. It is well-known that moles often furnish the soil for sarcomas, and that warts or papillomas for years benignant, sometimes all of a sudden commence to grow, because they are transformed into a carcinoma or sarcoma. The rapidity with which a dermoid cyst sometimes will grow involves a great nutritive hyperactivity. I can understand that this, in its turbulent way of forming tissues without an etiological object, could cause the physiological resistance to disappear, and thus open up the gates for malignant tumors.

Dr. A. Reeves Jackson read the following paper, entitled:

VAGINAL PRESSURE IN THE TREATMENT OF CHRONIC PELVIC DISEASE.

(See page 454).

Dr. Philip Adolphus: In the treatment of chronic pelvic disease by vaginal pressure, we may avail ourselves of the two methods of massage and columning the vagina. The latter has a much wider range in the treatment of pelvic disease than massage.

These methods have been hitherto applied to the removal of congestions, exudates, and recent slight adhesons of the serous tissues in the pelvis, which were in reach of vaginal pressure.

We often thought we had succeeded in removing by them old adhesions and bands, when merely recent effusions surrounding old deposits had become absorbed, just as nature will, without our aid, absorb a large pelvic effusion in a recent pelvic inflammation.

Neither method, however, can cause the removal of old cicatricial bands, firm adhesions and imbedded organs; and both are contra indicated when inflammation of the serous tissues exist.

But where dilatation and congestion are present, and comparatively recent adventitious and hyperplastic tissues are to be removed, the stimulant and alterative influence of pressure on the pelvic vessels induces absorption by either of these methods.

The treatment by massage will not, in future, be resorted to as often as formerly; for it is inefficient in its methods, dangerous in its tendency, as well as troublesome and indelicate to the physician and patient.

The sole object of massage is to induce sufficient irritation in order to effect absorption. But the tamponnement of the vagina does much more than massage.

It supports and relaxes tense ligaments; elevates the movable or adherent vagina, bladder, uterus and ovaries, provided they are not adherent to the pelvic walls; depletes congested, inflamed and subinvoluted organs; overcomes spasm and irritation, and induces physiological rest in the parts.

Tamponnement per vaginam is therefore indicated in all cases where pelvic tenderness is present which is not due to an acute attack, or where absorption is needed; it is efficient in cases of mal-position and

prolapse of the uterus, ovaries, ligaments and vagina, where elevation of the organs and mechanical support are required, preparatory to the use of pessaries, or where these cannot be borne.

Columning the vagina is effected in the knee-elbow position by means of Sim's or Simon's speculum. A large pinch of iodoform, boric acid or salicylic acid is first applied to the cervix, a few tampons saturated with glycerine are laid in the vault of the vagina, and then ordinary cotton wool, absorbent wool or iodoform gauze is systematically packed into the vagina, to remain there for three or four days. This packing is to be renewed until the effects are produced which the practitioner desires. The patient is not obliged to remain in bed, and the pelvic, sacral and hypogastric pains, together with urethral irritability, are frequently relieved in a short time by this method, which is altogether a more successful, cleanly and decent mode of procedure than that of massage.

Dr. James H. Etheridge: I have nothing additional to say except that the continued use of this method in many selected cases has produced most desirable results. But I would protest most emphatically against being understood as recommending it for every trouble of a pelvic nature. For the class of cases Dr. Jackson has enumerated I think it a vastly superior treatment. I was much impressed with the article of Dr. Taliaferro. He tampons the uterus cavity, with the patient in the genu-pectoral position, using a speculum of his own device, which is flanged at the lower end so as to separate the posterior portion of the vaginal orifice, the cervix being held steadily down by the vulsellum, and with a long-toothed forceps he pushes the cotton into the uterine cavity. The true explanation of the benefit which comes from this treatment is, that by elevating the uterus the pressure from its great weight is relieved. There is a mechanical obstruction to the return of blood from the uterus, and what is done by the tampon is to push up the uterus and permit its decongestion, and along with that comes the improved nutrition of the organ, and the reflex symptoms in the way of pain, menstrual disturbances and the like readily disappear. I cannot tell exactly how I was put upon this method of treatment; I don't claim that it is anything new. Several years ago Dr. Bozemann, of New York, tamponned the vagina, calling it "columning the vagina. He spoke of several cases of positive elongation of the posterior wall of the vagina with this continual pressure. His paper was published in full in the transactions of the American Gynæcological Society.

Dr. H. T. Byford: I agree with Dr. Etheridge, that any pressure that can be made by the vaginal pack could not cause the relief. The benefit of pressure upon enlarged veins in any part of the body, as in the leg or testicle, is only temporary unless some other curative influence be added. Nor do I think that a low position of the uterus causes the venous stasis, for this is not found in all cases, and often is found when the uterus is held high up by contracted and indurated sacro uterine ligaments. The veins are large, long and tortuous, and are made to admit of considerable change in position of the uterus in almost any direction. The rapid improvement comes from the support to the uterus, and sometimes also to the ovaries, taking away the traction upon inflamed and indurated ligaments, and thus promoting the absorption of exudations that either diminish the caliber of the veins or prevent them from accommodating themselves to the position of the uterus and its adnexa. This relief of strain and promotion of absorption in the pelvic tissues is the great remedy for subinvolution in the subacute stage, the same as rest in bed is the remedy in its acute stage, viz., soon after labor. It is in the subacute stage of pelvic disease that the vaginal pack finds its great sphere of usefulness. Dr. Jackson's second case serves as a good illustration. When the inflammation and induration are in the sacro uterine ligaments, two or three soft glycerine tampons, made of the best ordinary cotton batting (not the absorbent), placed under and in front of the cervix every second day at the office, and left till the next night, will often relieve the traction and bring about rapid improvement. When it becomes necessary to apply the complete pack, we will get the best effects by so placing the cotton and cotton wool as to relieve the traction upon tender parts, which should be found beforehand by a careful diagnosis.

Dr. Jackson: I think the subject has been very thoroughly discussed and the principal of the treatment clearly illustrated. The important fact is, that it is not a difficult method of treatment; that it is efficacious there can be no doubt; the clinical facts justify this assertion. The method pursued by Dr. Bozemann seems to me to be peculiarly objectionable. Strapping a woman on to a machine for the purpose of packing the vagina, seems both irksome and unnecessary. I am very glad there is such unanimity of opinion in regard to the clinical efficacy of this method of treatment.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, March 3, 1887.

The President, Thomas M. Drysdale, M.D., in the Chair.

(*Concluded from page 445.*)

Dr. Howard A. Pardee read a paper entitled

PERINEORRHAPHY AS PERFORMED BY DR. W. GILL WYLIE.

(See page 432, Journal of April 16.)

Dr. Parish had for years performed a similar operation, but carried his denudation farther up the vagina, and thus avoided the formation of a pocket-like place in which discharges accumulate. He has found it in some cases a cure for constipation.

Dr. Baldy did not think Dr. Pardee understood Emmet's operation.

Dr. Price prefers Emmet's operation.

Dr. H. A. Kelly thought this an unsatisfactory modification.

Dr. Pardee was well acquainted with Emmet's

operation as performed two and a half years ago. The obliteration of the rectocele in that operation was by drawing down a stretched wall, leaving it thin over the rectocele. In his experience opium had not been needed after the operation to control pain. The external stitches are needed to secure a neat external healing.

Dr. Joseph Price exhibited a specimen of

DOUBLE PYOSALPINX, WITH COEXISTING OVARIAN CYSTOMA ON BOTH SIDES.

Mrs. H., æt. 30 years, two children, labors normal, complains of irregular and profuse bleeding; constant pelvic pain, greatest on left side. General health poor. Examination revealed a small fibroid on posterior wall of the uterus; a cyst on the right side extending high up, inflammatory masses laterally. *Operation*, section. The appendages on both sides were distended by pus and generally adherent, left ovary cystic and suppurating, and matted to the pavilion of tube and the sigmoid flexure. The right ovary was cystic and adherent to the vermiform appendix. The pelvis was filled with an irregular conglomeration of cysts and pus-tubes, intimately adherent to pelvic organs, and overlying all this were the bladder and omentum, also firmly adherent. The omentum was perforated at two points, and the mass was removed by careful dissection. A glass drainage-tube was used. Recovery was rapid and perfect; no opium, no catheter, tube out on fourth day, stitches out on seventh day.

Dr. W. H. Parish reported a

PORRO-MÜLLER OPERATION,

performed by Drs. O. H. Allis and W. H. Parish because of an impacted shoulder presentation. Mary Leparo, æt. 26 years, of small stature but good general health. When about six months pregnant she had been hooked by a cow and narrowly escaped a miscarriage. She reached full term and had been in labor seven days when Dr. Allis was telegraphed for by Dr. Groom, of Bristol, Pa., in whose care the patient had been. The membranes ruptured four hours after the pains began. On the sixth day the pains became more severe and the cord prolapsed. About the same time a hand protruded from the vagina. The child died about this time. Version had been tried by Dr. Groom and others, without and with anæsthesia, but could not be effected. The child was evidently of large size; the patient was restless, exhausted, and with a pulse of 120 per minute. The pains were constant and the uterus was firmly contracted above the child. The patient's surroundings were unfavorable, the ignorance and poverty of the family rendered proper nursing impracticable. An offensive fluid was escaping from the uterus; the cervix was rigid and but slightly dilated. It seemed impossible to deliver the patient by either cephalic or podalic version, and the conclusion was made that evisceration was not advisable, because there was every reason to believe that the uterus had done itself irreparable harm by reason of its prolonged retraction against the eminences of the child. The contusion incident to the retraction and the admission of atmospheric air over a period of seven days, with the character of the discharge, rendered it certain that gangrenous changes had been going on in the endometrium and placenta, and that septic inflammatory action of the uterine lymphatics had already begun. The patient was in a condition of exhaustion. Evisceration alone would not have sufficed to secure delivery; it would have been necessary to have bisected the child in the lumbar region and to have removed separately the lower and upper sections. The condition of the uterus and the small size of the pelvis would have rendered this procedure a lengthy and an exceedingly difficult one, and would have added additional serious injury to the uterine tissues. The removal of the child would have left a putrefying endometrium and septic lymphatics. I felt certain the patient would die if thus delivered. All present thought Cæsarean section indicated. The operation was performed by Dr. Allis. The uterus was elevated from the abdomen and a rubber tubing was placed about the cervix, securely controlling the hæmorrhage. Escape of fluids from the uterus was guarded against by means of warm antiseptic pads adjusted about and over the abdominal incision. A vertical incision was now made, and the child extracted without difficulty. The placenta was not in the line of incision and there was no hæmorrhage. Two transverse pins were carried through the cervix, and a constricting wire was substituted for the rubber tubing about the junction of the cervix with the body of the uterus. With the uterine body were removed also both broad ligaments and their contents. The uterine stump was secured externally by means of the transfixion pins, and wounds closed by carbolized silk sutures. Antiseptic measures were taken throughout the operation, but the spray was not used. Immediately after the operation the pulse was 130 per minute. The patient died in forty-eight hours, apparently from heart failure. A full account of this case will be found in the *American Journal of Obstetrics*.

Dr. R. P. Harris remarked that the Cæsarean operation has been performed in the United States in cases of impaction of the fœtus in a transverse position twelve times. In eleven cases the fœtus was dead. In the twelfth it was saved, but the operation was believed to have been uncalled for by a physician who performed laparotomy with success after the woman had ruptured her uterus, in her next labor. The pelvis had been computed to have a conjugate and a transverse diameter of three inches. In one other of the twelve cases the pelvis was deformed, and the woman saved. The arm was protruding in seven cases, five of which recovered. In two the shoulder presented; one saved; and in three the presenting part is not named. Of the twelve cases nine, or 75 per cent., recovered. Of the three cases lost one was ninety-six hours in labor, three days in charge of a midwife. Another wes twenty-six hours under a midwife who had given ergot and ruptured the membranes; and the third had been long in labor, but time not stated. Her death was caused by fright and exhaustion; she rose from her bed to defend her mother against her husband, who had come home drunk on the third day. He knew

of but one case of impaction in Europe in which the Porro operation was performed, but in this the pelvis was deformed. The operation was by Fehling, of Stuttgart, and the woman was saved. Putridity of the fœtus may require the removal of the uterus in a case of impaction. One woman was saved, without its removal, in the United States after seven, and another after ten days of labor, by uterine suturing to prevent escape of fluid; but it is safer to remove the organ where there is danger of poisoning, and particularly where the patient appears to be already threatened with it. In the Porro case of Candido Ramello, of Turin, the woman had been six days in labor, the fœtus was putrid, and the mother in great danger of septicæmia. The removal of her uterus with its contents was followed by an improvement of her symptoms, and she recovered.

FOREIGN CORRESPONDENCE

SURGERY IN LIVERPOOL AND MANCHESTER.[1]

I spent two days in Liverpool, and became personally acquainted with Rushton Parker, Reginald Harrison and Mitchell Banks. Parker lectured on "Sarcoma" to a class of fourteen students. Looking at his class-list I noticed twenty-seven names. The lecture was delivered in a colloquial style and gave evidence of a good clinical acquaintance with his subject, but no deep points in histology or pathology were elaborated. I visited with him the Royal Infirmary and the various departments of the University, which is located in close proximity to the hospital. The chemical branch of this institution was erected and endowed by some of the rich manufacturers of the city, and is a model of usefulness and perfection.

Harrison is a man of middle age and is an enthusiast in his specialty. He showed me several cases of rupture of the urethra followed by extravasation where he had made external urethrotomy and incisions through the infiltrated tissues. He places great stress upon the necessity of removing the extravasation by firm compression, relieving the tissues at once of the fluid in the same manner as squeezing a sponge. The result of this procedure is to prevent sloughing and hastening the suppurative process. He drains the bladder only for a few days with his drain. He is a firm advocate of boutonnière for diagnostic and therapeutic purposes. He looks upon this operation as a trivial procedure almost devoid of danger. He introduces the drain along the groove of a Wheelhouse's gorget. He also demonstrated upon several cases the advantages of his "whip bougie." This instrument is about twenty inches in length, and if previously warmed is so flexible that it doubles upon itself, when fully introduced, without doing damage to the walls of the bladder. As the instrument is conical in shape, one introduction is followed by the same degree of dilatation as the introduction of a number of the ordinary filiform bougies. He favors treatment of strictures of urethra by gradual dilatation, and reserves the cutting operation for exceptional cases.

He is not favorably inclined to the crushing operation for stone in the bladder, and showed a case of lateral operation done a few days before where the wound had almost completely healed.

In plastic operations upon the urethra he performs the buttonhole operation, and drains the bladder as a preliminary measure. You can readily conceive the advantages accruing from this precaution, as it secures to the wound the two essential conditions for rapid healing: rest and the possibility of an aseptic healing. In draining the bladder he stitches the margins of the wound closely around the tube so as to prevent leakage between the drain and the soft parts.

In hypospadias and epispadias he makes the new urethra by tunneling the tissues from the apex of the glans penis to the abnormal opening, and secures patency for the new channel by introducing a drainage-tube until the healing process is completed. As a last step the abnormal opening is accurately closed over a catheter and the urethral continuity is restored. To guard against subsequent constriction of the new canal the patient is instructed to introduce a good-sized bougie at least once a week.

Mr. Banks operated upon a case of carcinoma of the breast, and although the axillary glands did not appear to be involved, a clean dissection of the axilla was made to the axillary vessels. Wherever a vessel was recognized it was ligated at two points and divided between the ligatures, consequently very little blood was lost during the operation. A spectator was readily convinced that the operator had been for years a teacher of anatomy. Spray was used, as I was told, more for the purpose of irrigating the wound than for its supposed effect in sterilizing the atmosphere. The wound was completely closed with silver sutures and drainage established in the lower posterior recesses of the wound. As an antiseptic dressing sublimated wood wool cushions are are used. I received the impression that dressings are too frequently changed in this hospital, thus depriving the wounds of that perfect rest required in a typical wound-healing and exposing the patients to the risks of subsequent infection during the frequent dressings.

Mr. Banks also operated upon a lad who had received a scalp wound nearly three months ago. No brain symptoms were present after the injury or for some time subsequently. During the last few weeks rise in temperature, slight suppuration of wound. For the last few days greater rise in temperature, vomiting and sopor; both pupils contracted. At site of injury over the left frontal region the wound presented a granulating appearance and a probe could be passed through a small aperture into the skull. Probable diagnosis, suppurative pachymeningitis. The field of operation was carefully disinfected, and while patient was under the influence of chloroform the opening in the bone was enlarged with bone forceps. The dura bulged into the wound and did not

[1] This letter from Dr. N. Senn is published by the kind permission of Dr. Christian Fenger and Dr. Senn. Others will appear.

pulsate. The meninges were incised with a sharp bistoury without having made an exploratory puncture, but no pus or any other fluid remained, and after some superficial probing the wound was dressed without making any further attempt to search for a deep-seated abscess.

Mr. Thos. Jones, of Manchester, one of the surgeons of the Royal Infirmary, is lecturer on Clinical Surgery in Owen's College, and a surgeon who is esteemed not only in his own city but throughout the United Kingdom. The Infirmary contains about 300 beds, and, although an old building, is well ventilated and well furnished. Typical resections of the hip and knee are in favor, and many cases were shown in which this operation had been performed. Antiseptic wound treatment is followed, but many of the more minute details are not carried out. Sublimated wood wool dressings are used almost exclusively. Many of the operation wounds showed evidences of imperfect wound treatment. For immobilization of the lower extremity Thomas's splint is used in preference to any other. Fractures are treated with removable splints until swelling has subsided before the plaster-of-Paris splint is applied.

Mr. Hardy was met in the operating-room, where he was putting on the finishing touches in a rhinoplastic operation made by transplanting distal phalanx of left index finger for a bony support and a covering of a flap taken from the anterior surface of the left arm. Interval between the several steps of the operation of about three or four weeks. Present cosmetic results quite satisfactory. He has done this operation three times, and always with a satisfactory result.

I was shown a case of myxœdema in a girl 21 years of age. Mr. Jones also called my attention to a case of metastatic carcinoma following scirrhus of the breast, of more than twenty years' standing, which had resulted in a pathological fracture of the left femur and right humerus. The interesting feature in this case consisted of rapid swelling at the point of fracture with subsequent subsidence of swelling, but no union between the disunited bones.

A case of multiple fibromata of a congenital origin also attracted my attention. The patient was a male about 50 years of age, thousands of tumors covering the entire surface of the body from the scalp to the plantar surfaces of the feet.

In the afternoon I visited Owen's College in company with Dr. Sinclair, who introduced me to the eminent physiologist, Dr. Stirling, the translator and annotator of Landois' "Physiology."

A visit to a private hospital for women and children with Dr. Sinclair, the attending gynecologist, proved interesting and profitable. I was shown three cases in which abdominal section had been done for different indications; in all of them the dressing was removed and the glass drains emptied by suction with a syringe mounted with a rubber tube. In all of them a small quantity of a reddish serum was removed and the drains washed out with ¾ per cent. solution of chloride of sodium. The temperature was normal, or nearly so, in all of them. The operations are all done under the strictest antiseptic precautions. Dr. Sinclair is a gynecologist who has the interests of his profession at heart, and who has a promising future before him.

I visited Dr. Ross at his home with Dr. Robertson. He lives in a comfortable, almost luxurious mansion in one of the most beautiful suburbs of the city. With a capacious park surrounding his house, completely isolating him from the turmoils of a great city, we can readily conceive how a man of his intelligence and indomitable energy should accomplish so much. I met him on the following day in his wards at the Infirmary, and was pleased to follow him in his elaborate description of three cases of peripheral neuritis then under his care. The diagnostic tests were applied in presence of the class and could not fail to bring conviction to all of those who were fortunate enough to be within his hearing.

I also went to Oldham, the home and field of labor of Dr. Robertson, who showed me his cases at the Infirmary, a neat hospital containing 90 beds. Everything in the wards showed perfect discipline and the most careful management. Dr. Robertson is a young physician who furnishes a good illustration of what can be accomplished by modern aggressive surgery. Three simple cases of abdominal section had recently been done and had proved fatal within twenty-four hours from acute septic peritonitis. A search for the cause showed that defective drainage had occurred by the leakage of sewer pipes in the basement. The last case was operated upon in a cottage near the hospital, and was progressing favorably. At this place I had an opportunity of examining a patient with a fusiform aneurism, where the pulsations were distinct, but no bruit could be heard on auscultation. The patient contracted syphilis many years ago, and this disease was undoubtedly the result of mes-arteritis.

In the Manchester Royal Infirmary I saw Mr. Whitehead make a cholecystotomy. The patient was a male, about 50 years of age, who for four months had suffered from periodical pain in the region of the gall-bladder, followed by progressive jaundice. On palpation it was thought that the margins of the distended viscus could be felt. Under spray an incision was made parallel to and about a finger's breadth below the costal arch on the right side, sufficiently long for the operator to introduce two fingers for making the necessary exploration. As this opening appeared to be inadequate, another incision was made, at a right angle with the first, in a downward direction, when the gall-bladder, distended to the size of a small pear, was readily brought into the wound for inspection and palpation. A superficial examination showed that it contained no stones, but as its contents could not be emptied by compression, and palpation of the bile ducts did not satisfy the operator as to the presence or precise location of a probable stone in the ducts, the organ was stitched into the wound in the usual manner, to be opened and explored after adhesions had been secured.

I visited the Pendlebury Hospital for Sick Children, about four miles from the centre of the city, with Mr. Wright, one of the attending surgeons. This institution has a capacity of 300 beds, is con-

structed upon the pavilion plan and located in one of the most salubrious suburbs of the city. It is a model of architectural perfection. Mr. Wright is a most careful and prudent surgeon, and has done most excellent work. . He operates early in cases of hip joint disease, but has abandoned typical resections of knee joint disease in favor of arthrectomy and atypical resections whenever such a course appears practical. He showed six cases of resection of the hip joint done recently, and most of them were without temperature. Fixation of limb is secured by means of Thomas' splint. The spray is used during the operation, and sublimated wool dressings are in general use. For fixation of dressing the elastic webbing bandage is frequently used. Tubercular glands are removed early, and the results of this method of operation have been satisfactory.

Mr. Wright strongly advocates radical operation for hernia in children, and in his hands the operation has been followed by only one death out of a great number subjected to this treatment. He does not remove the sac, but secures perfect coaptation by making with a needle, armed with a catgut ligature, numerous points of transfixion, and tying the ligature.

The nurses are well trained and render intelligent assistance at operations, as was demonstrated by a number of operations made during my presence. In my next letter I will report upon the result of my observations in Glasgow, Aberdeen and Edinburgh.

N. SENN.

NECROLOGY.

DR. JAMES STEWART JEWELL.

By the death of Dr. Jewell the American medical profession has lost a member of whom it has had reason to be proud in all respects. A self-made man in every sense of the word, who had obtained his thorough education solely through his own unaided efforts, he had risen to a position of great eminence as authority in the line of nervous and mental diseases, and as a recognized leader in medical thought. With his extensive general and medical knowledge he combined a rare good judgment and tact, as well as a dignified and kind manner which made him the ideal representative of the medical profession in the eyes of the public. His thorough culture, coupled with modest though firm self reliance, could not fail to impress his patients, as well as the public in general. with the belief that his opinion on any medical subject reflected, indeed, the best and most recent views that medical science of the day could suggest.

Dr. Jewell was born in 1838, on a farm near Galena, Ill., where he remained until his 14th year. During this time his school life did not comprise over one year, and whatever knowledge he did acquire was picked up during times which others would have considered but proper rest from labor, unusually severe for one of his age. Subsequently his family removed to Marion, Ill. There he continued his farm work, by which he contributed largely to the support of his family. His thirst for education, aided by an unswerving persistence of purpose urged him to procure books whenever possible, often traveling long distances on foot to obtain the loan of some coveted volume. Over these treasures he would pore—even all night—and yet not allow them to interfere with the necessary daily routine of farm labor. His taste for science, and especially medicine was encouraged by Dr. S. W. Mitchell, of Corinth, whose library in later years afforded him the means of improving his education. It was to him as well that he owed his final preparation for college life. He entered Rush Medical College in Chicago in 1859, and finished in the following year in the first class of the newly founded Chicago Medical College. After passing a term as Interne in Mercy Hospital he returned to a country practice in Williamson County, but finally entered the army and served as surgeon in an Illinois regiment during the last year and a half of the war. In 1864 he returned to Chicago to fill the position of assistant to the chair of anatomy in the Chicago Medical College, but by reason of the resignation of the previous incumbent he was at once promoted to the full professorship. Having married he now devoted himself to general practice in this city until 1868, when he left for an extended tour through Europe and the Orient. Upon his return in 1870, the Chicago Medical College created especially for him the chair of nervous and mental diseases, to which specialty he then devoted himself exclusively. Without publishing much he became so favorably known in the profession through his teaching and personal intercourse that when he began his *Journal of Nervous and Mental Disease* in 1874, it was at once a complete success. This magazine was the first organ devoted to that specialty in the English language. Any one who has followed the American periodical literature since that time, can but admit that Dr. Jewell's journal has exerted a stimulating influence on the growth of that specialty in this country, as well as on the general diffusion of a knowledge of scientific medicine. In 1875, Dr. Jewell contributed largely to the foundation of the American Neurological Society, of which he subsequently became president. As the natural result of his well directed efforts he acquired a very large consultation practice in his specialty. In the field he had chosen he encountered naturally a great many sufferers from chronic diseases of unusual obscurity, and in this very line of practice his remarkable thoroughness and penetrating judgment enabled him to achieve practical triumphs which will keep his memory alive for years to come throughout the entire northwest.

Some six years ago his health began to fail. With many regrets he deemed it best to relieve himself of the severe tax which the management of his journal put on his time. In spite of continued suffering and distress he continued his arduous practice and managed for a time to struggle vigorously against his physical misfortune, increased by the blow which he received on the death of his wife. Repeatedly he broke down, however, and was forced to pass part of his winters in the south. About one year ago he began the *Neurological Review*, but his health did not

permit him to continue its publication for more than a few numbers. Although sinking steadily during the present winter, he did not abandon his practice until within a few days of his death on the 18th of April. He leaves behind a family of four, two sons and two daughters.

While Dr. Jewell's name was not coupled with any important discoveries in medicine, his teaching, both by word in the college and by means of his many valuable contributions to periodical literature, has been of unmistakable benefit to the profession. He was always an enthusiast in the application of all scientific data for scientific purposes. Thoroughly acquainted with everything that was being done in the scientific world, his steady aim was to investigate disease in the light of the most recent physiological developments. For many years he has been busy on a work on the pathology of the nervous system, on the basis of many hundreds of clinical records of unusual thoroughness, but whether enough of the manuscript has been completed to publish the book, is as yet uncertain. He had formed plans and collected material besides for several monographs, but it is unfortunately not yet positive whether his literary legacy is realizable.

Personally Dr. Jewell possessed a rare amiability and kind disposition not likely to be forgotten by his many friends. No man could have achieved his position under such difficulties, and surmounted such obstacles as he did during youth without possessing an undaunted energy and indomitable persistence of purpose. His undisguised contempt for all actions of a small calibre could not but arouse the opposition of some few envious of his success; but withal he had no open enemies. May the memory of a truly grand life serve as a model for others.

H. G.

INTERNATIONAL CONGRESS.

Section in Psychological Medicine and Nervous Diseases.

President, JUDSON B. ANDREWS, M.D., Buffalo, N. Y.

The following titles of papers have been presented for this Section: "The True Nature and Definition of Insanity;" "Lunacy in Scotland;" "Nervous Degeneration and Syphilis" (selected as a subject for Discussion); "Locomotor Ataxia and Syphilis;" "Original Investigations in Cerebral Syphilis, with Microscopic Preparations, etc.;" "Relation of Syphilis to General Paralysis;" "State Policy in Relation to the Construction of Buildings for the Insane;" "Hospital Arrangements and Classification as relates to the care and comfort of Patients;" "Modern Hospital and Asylum Structures for the Insane;" "The Borderland and Early Symptoms of Insanity;" "The Religious Delusions of the Insane;" "Mental Manifestations of Insanity caused by Sunstroke;" "The Remissions, Intermissions, and Manifestations of Insanity in an Individual;" "General Paresis; Its Varieties and Differential Diagnosis;" "Legal Relations of Epilepsy;" "Obscure Forms of Epilepsy;" "Sleep;" "Miliary Aneurismal Disease of the Spinal Cord and Brain Axis;" "Deformity of the Brain in its Relation to Congenital and Inherited Mental Disease;" "Cases Illustrating the Prow shaped Cranium with Neurotic Disease;" "Remarks on the Etiology and Pathology of Thomsen's Disease; "Tendon Reflex in Hemiplegia;" "Hyperæsthesia;" "Castration as a Remedy in Nervous Affections;" "Occupation in the Treatment of Insanity;" "The Treatment of Neuralgia from the point of View of the General Practitioner;" "The Disease of Inebriety and its Treatment;" "The Physiological and Therapeutical Effects of Currents of High Tension (Franklinization);" "The Private Treatment of the Insane, as Single Patients in England;" "Mental Diseases Produced by Changes in the Vessels at the Base of the Brain;" "An International Classification of Insanity;" "Monomania;" "Cocaine Inebriety;" "General Paralysis in Dogs." Several titles are yet to be received.

Among the foreign physicians who contribute to the foregoing list of titles of papers to be read, or who intend to be present and participate in the scientific work of the Section, are Sir James Creighton Brown, Drs. Rudolf Arndt, Buiswanger, Geo. Fielding Blandford, Bouchereau, Francis Pritchard Davis, Maurey Deas, J. Langdon Down, Edward East, A. Eulenberg, E. T. Girtstrom, V. Hinze, Megalhães Lemos, H. Rooke Ley, E. Mendel, Wm. Julius Mickle, Arthur Mitchell, O. Muller, M. Rosenthal, George H. Savage, Seymour J. Sharkey, J. Beverly Spence, Valdemar Sternberg, D. Hack Tuke, John Batty Tuke.

Communications relating to papers, discussions, etc., should be addressed to the Secretary of the Section, Dr. E. D. Ferguson, Troy, N. Y.

Section of Laryngology.

PRESIDENT.

W. H. Daly, M.D., 71 Sixth Ave., Pittsburg, Pa., U. S. A.

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Wm. Porter, M.D., 3137 Lucas St., St. Louis, Mo., U. S. A.

D. N. Rankin, A.M., M.D., 85 Lincoln Ave, Allegheny, Pa., U. S. A.

Dr. Ottakar Chiari, 14 Elisabeth Strasse, Vienna, Austria.

Dr. E. G. Moure, 2 Cours de Tournon, Bordeaux, France.

The following gentlemen have signified their intention of presenting papers:

Dr. B. Baginsky, Berlin, Germany; Dr. S. N. Benham, Pittsburgh, Pa.; Dr. A. Cartaz, Paris, France; Dr. W. E. Casselberry, Chicago, Ill.; Dr. W. Cheatham, Louisville, Ky.; Dr. A. J. Coey, Chicago, Ill.; Dr. W. W. Cole, Allegheny, Pa.; Dr. W. F. Coomes, Louisville, Ky.; Dr. Ephraim Cutter, New York, N. Y.; Dr. H. H. Curtis, New York, N. Y.; Dr. W. H. Daly, Pittsburgh, Pa.; Dr. T. D. Davis, Pittsburgh, Pa.; Dr. C. M. Desvernine, Havana, Cuba; Dr. Richard Ellis, Newcastle-on-Tyne, England; Dr. Richardson Gray, Orange, N. J.; Prof. Joseph Gruber, Vienna, Austria; Prof. Hack, Frieburg in Baden, Germany; Dr. J. H. Hartman, Baltimore,

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ASSOCIATION ITEMS.

OPHTHALMOLOGICAL SECTION.

The Thirty-eighth Annual Session will be held in Chicago, Ill., on Tuesday, Wednesday, Thursday and Friday, June 7, 8, 9 and 10, commencing on Tuesday, at 11 A. M.

"Sympathetic Ophthalmia." Dr. C. M. Hobby, Iowa City, Iowa.

"Some Observations on Displacement of the Crystaline Lens, from Congenital and other Causes." Dr. J. L. Thompson, Indianapolis, Ind.

"Hydrobromate of Hyoscine as a Mydriatic." J. M. Ray, M.D., Louisville, Ky.

"Treatment of Hypopyon Keratitis with frequent irrigations of Sublimate." Dr. F. C. Hotz, Chicago, Ill.

"Some of the Ophthalmological Clinics of Europe." J. W. Heustis, M.D., Pittsburg, Pa.

HOTEL RATES.

The following hotels in Chicago have thus far commuted their rates to delegates and members and their families who will attend the annual meeting in June —all promising first-class accommodations:

Grand Pacific Hotel.—A discount of 50 cents to each person per day in all rooms, except those at $3.00 per day, on which there will be no discount. By this arrangement a $3.50 room with bath may be had for $3 00, a $4.00 room for $3.50 for each person, and so on. A club room will also be placed *free* at the disposal of the Association for headquarters, if desired.

The Sherman House will give 50 cents *per capita* off regular rates, which are $3.50 to $5.00 *per diem*, as well 50 cents *per capita* off $3.00 per day rooms where more than one person occupy a room. Such committee rooms, etc., as may be required will be placed at the disposal of the Association free of cost. No cots are ever used at this hotel, and every one will be given a good bed.

The Tremont House offers 50 cents discount from regular rates, which are from $3.00 to $4.50 *per diem*. This rate applies to each person or delegate, both included.

The Palmer House gives a rebate of 50 cents *per capita* on the American plan, when two occupy a room. On $1.00 rooms, (European plan) a rebate of 25 cents *per capita* where two occupy a room. On rooms for which the rate is $1.50 and upwards, a rebate (on the European plan) of 50 cents *per capita* is offered.

The Briggs House.—The rates will be $2.00 to $2.50 per day for their *best* rooms, meals included, a reduction of 50 cents per day on transient rates.

The above hotels are located within a few blocks of Central Music Hall, the place where the general (forenoon) sessions will be held. Additional information as to hotel rates will be published in subsequent issues of THE JOURNAL.

RAILROAD RATES for delegates will be published in full next week. They will be one and one-third ($1\frac{1}{3}$) fare for the round trip issued on the certificate plan, as follows:

Tickets for return journey will be furnished those having paid full fare to place of meeting who procure tickets not more than three days before the Association assembles, if presented within three days after the date of adjournment. Some forty different railroads of the country having already agreed to accept return tickets issued under this plan. The names of these railroads will also be published in next weeks' issue of THE JOURNAL.

CHARLES GILMAN SMITH, M.D.,
Chairman Local Committee of Arrangements.
LISTON H. MONTGOMERY, M.D.,
Chairman Committee on Transportation.

MISCELLANEOUS.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 16, 1887, TO APRIL 22, 1887

Capt. Edward B. Moseley, Asst. Surgeon, ordered for duty at Whipple Bks., Ariz.. S. O. 89, A. G. O., April 18, 1887.

APPOINTMENTS.

Charles E. Woodruff, Julian, M. Cabell, to be Asst. Surgeons with the rank of First Lieut., to date from April 14, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING APRIL 23, 1887.

Russell, A. C. H., P. A. Surgeon, U. S. N. ordered to duty at Naval Laboratory, New York. May 2, 1887.

Heffenger, A. C., P. A. Surgeon, U. S. N., ordered to Widow's Island, Me., to superintend building a naval hospital, wharf and other improvements, under instructions of the Surgeon-General of the Navy.

Woodruff, Chas. E, Asst. Surgeon, U. S. N., resignation accepted, to take effect April 8, 1887.

THE

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CLINICAL LECTURE
ON
THE GENERAL PRINCIPLES INVOLVED IN AMPUTATION,
With a Consideration of Some Points in the Technique.

BY FREDERIC S. DENNIS, M.D.,

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF SURGERY IN THE BELLEVUE HOSPITAL MEDICAL COLLEGE, NEW YORK CITY.

[REPORTED BY SEYMOUR H. HOUGHTON, M.D., HOUSE SURGEON, BELLEVUE HOSPITAL.]

Gentlemen:—The late Sir Wm. Fergusson used to speak of amputation as "one of the meanest, and yet one of the greatest operations in surgery; mean when resorted to if better may be done—great as the only step to give comfort and prolong life." In studying the conditions under which amputations have been resorted to during the past half century, it is astonishing to see how limited in number those conditions are at the present day. Szymanowski once said that "we must reach such a state of perfection in amputation as to consider every amputation a plastic operation;" and with a view to the accomplishment of such an object I desire to direct attention to this subject in the lecture to-day.

There are four periods at which an amputation can be performed: *1. Immediate*—before reaction from shock; *2. Primary*—after reaction but before inflammation; *3. Intermediate*—after inflammation but before suppuration; *4. Secondary*—after suppuration is established. For all practical purposes these four periods can be reduced to the primary and secondary. As a rule, to which there is scarcely an exception, the immediate amputation should not be performed, as the patient is likely to die from shock during the operation. The double shock of the operation and of the injury is apt to kill the patient; and the shock of the injury of the limb may be complicated with shock from injury of some important internal organ from which the patient could never rally, and hence the impropriety of the amputation, and the needless addition of suffering to the patient on account of the operation.

It is sometimes necessary to amputate as soon as consistent with safety. Now, what is to guide the surgeon in his decision of so important a question? In cases of compound comminuted fracture, with injury to the main artery of the limb and with great loss and destruction of tissue in the soft parts, the hæmorrhage is often alarming, and amputation is called for imperatively as the only salvation for the patient. What is the earliest moment a surgeon should operate? Never during profound shock; and the rule which must govern a surgeon is, to employ all known means to control hæmorrhage and to bring about reaction from shock, and wait. If the patient has pallor and coldness of skin, weak and feeble pulse, sighing respiration, non-reacting pupils, traumatic delirium—internal injuries, no amputation is indicated. The earliest possible time an amputation can be performed, under great necessity from hæmorrhage, is when reaction is beginning; but unless the patient is likely to become exsanguined by delay the beginning of reaction is an unfavorable period for operation, and it is wise to defer it until reaction is fully established. Amputation should not be performed with a sub-normal temperature, a cold skin, a feeble rapid pulse, or during traumatic delirium—especially in children. The condition, then, of the temperature, the skin, the character of the pulse and the mental state, are all important factors in the solution of this problem. Delay in performing an amputation was formerly fraught with very great danger from septic infection; but with the modern methods of preventing sepsis in a recent wound, this obstacle is removed; and with antiseptic compresses applied tightly over the bleeding wound, and not above the wound upon sound tissue, hæmorrhage can be controlled and the wound kept from rapid sepsis a sufficient time to give the patient opportunity to react. I have seen an Esmarch elastic bandage applied above a lacerated wound, over sound tissue, and when the flaps were made a certain amount of sloughing followed from the compression. The wound itself is the proper place to apply firm compression, never above the seat of the wound. This point is one of practical importance, because the elastic bandage as a means of controlling hæmorrhage has been misused; instead of applying the compression over the bleeding part, it has been carried above the bleeding part and over sound tissue. As a result of this, gangrene in the flaps may occur, with its accompanying septicæmia.

The mortality of amputations depends upon a variety of conditions; even the state of the weather has been shown to have a causative effect on the death rate. Hewson has shown that with a rising barometer the average duration of life in the fatal cases was only 7 days, while with a falling barometer the average duration was 13 days; and that 75 per

cent. of the fatal cases died when the barometer was rising. The conclusion is that, while the state of the weather may or may not turn the tide for or against any given patient after amputation, barometric changes materially influence the condition of patients suffering from the effects of severe surgical operations, and have a slight influence upon the death-rate.

Age is also a factor in estimating the mortality after amputations. Holmes has proved "that the risk of amputations is constantly rising throughout life, and that at any given period after 30 years of age the risk is more than twice as great as it was at the same period after birth." Thus if, for example, it may be stated that 5 per cent. is the mortality after amputation in a child at 10 years of age, the mortality at 40 years would be 10 per cent.

The *seat* of the amputation is also an important factor. Amputations of the lower are more fatal than those of the upper extremities. In any given limb the death-rate increases in reference to the proximity of the amputation to the trunk. Thus if, for example, amputation of the thigh be represented by 50 per cent., the leg would be 40 per cent., the arm 25 per cent., the forearm 13 per cent. These figures are far too high since the introduction of antisepsis, but are quoted to show the relative figures in the different amputations.

The *part of the bone* sawn through affects the mortality. The mortality is greater where the shaft is divided so as to expose the medullary canal than where the cancellated tissue of the bone is sawn through; for in the former case, the risks of pyæmia and osteo myelitis are greater than in the latter case.

The primary amputation is much more fatal than the secondary. Sir James Paget states that the mortality is 12 times greater in the former case. This rate is perhaps too high; but the fact that the primary amputation is attended with a greater death-rate is due to the severe character of the injury. It has been stated that the amputation of expediency, performed for the relief of deformity, is attended with a greater mortality than either primary or secondary amputations.

The *general health* of the patient importantly influences the success of an amputation. The condition of the kidneys, lungs, heart, and vascular system, liver, brain, and other important organs, materially affects the results after amputations.

The *previous habits* of the patient is another important factor. A man of dissipated habits has his chances of recovery lessened by his profligate life, while the temperate man has his chances of recovery greatly increased. Pneumonia often causes death after amputations in those cases where the patients have been hard drinkers for many years.

The *hygienic conditions* are most important in affecting the mortality. Patients in the country do better than those in the city, and the latter do better in private practice than in hospitals. Always secure for a patient abundance of fresh air and plenty of sunlight. Too much stress cannot be placed upon his hygienic surroundings. While the weather, age of patient, seat of amputation, the part of the bone sawn through, whether for injury or disease or deformity—above all and beyond all the hygienic conditions stand out foremost; and if we exclude serious organic disease, nothing is so important as the sanitary arrangements. Sir James Y. Simpson showed that five times as many deaths occurred after amputations in large city hospitals as in private and country practice. To-day the mortality in amputations is very much less than in his day, and a large majority of the causes of death following amputations may be said to have been forever eliminated by the application of the principles of science to surgery. We will now discuss the indications for an amputation:

Aneurism.
Malignant disease.
Perforating ulcer of foot.
Uncontrollable hæmorrhage (primary or secondary).
The operation of expediency in deformity, in tumors and tetanus.
A disease of the joint.
The moist variety of gangrene.
In certain compound fractures and dislocations.
Old sloughing and varicose ulcers.
Necrosis of bone.

These ten indications for amputations have thus been arranged in an acrostic, which will always enable the student or surgeon to have at his command the information.

REQUISITES OF A GOOD STUMP.

1. The bone must be amply covered.
2. The flaps must not be adherent to the bone nor exert pressure on traction upon the cicatrix.
3. The nerves must not be adherent to bone or cicatrix.
4. The nerves must be cut high enough so as not to be affected by pressure or by atmospheric changes.
5. The bone must be smooth and capable of bearing firm pressure upon it.

CHARACTERISTICS OF A BAD STUMP.

1. Necrosis at end of bone.	Sequestrum from injury to bone in sawing, by rough use of saw, by suppuration in bone by injury to periosteum, by sawing without irrigation to prevent the saw from acting as an actual cautery.
2. Conical-shaped stump.	Insufficient covering, spasmodic retraction of muscles, growth of bone.
3. Neuralgia of stump.	External pressure, local and constitutional causes, bulbous enlargement, adhesion to cicatrix.

We may now direct attention to a careful study of the technique of the operation in its present perfected state. For the purposes of description of an amputation in general the following points are to be considered in an amputation of the leg:

First—Preparation of patient.

Second—Provision against hæmorrhage before operation.

Third—Formation of a suitable flap.

Fourth—Section of the bone.

Fifth—Provision against hæmorrhage during operation.

Sixth—Treatment of wound.

The preparation of the patient consists in a careful study of the patient's history, and also the special preparation of the member to be removed. Before the operation the heart and lungs should be examined, the urine analyzed, the general habits of the

patient inquired into with reference to intemperance, and opium habit, or previous disease, and other points of interest which influence the treatment after operation, as well as the mortality. In other words, the surgeon should study thoroughly the individual upon whom he is to operate, and make himself complete master of the situation. The local attention to the part consists in thorough ablution, shaving, and free irrigation with carbolic acid or bichloride of mercury solution.

Provision against hæmorrhage before the operation.—The limb should be elevated and held for a few minutes, and at the same time rubbed towards the trunk. The tourniquet should be now placed over the femoral just beneath Poupart's ligament, so as to press against the bone. It should be screwed down quickly upon a bandage placed under the bone and over the artery; if it is slowly turned a large amount of blood will pass into the limb, and the compression is soon sufficient to keep the venous return in the limb, but not enough to prevent arterial blood from entering the limb. Esmarch's bandage is often used instead of Petit's tourniquet, but the amount of oozing following its use is so great that I prefer digital pressure on the tourniquet, when properly applied. If the Esmarch bandage is used and the main vessels are ligated, the irrigation by hot water, as suggested by I. Varick, of Jersey City, will control the oozing better than any other means. If the hot water is employed for this purpose I should recommend that a weak solution of carbolic acid be prepared in anticipation, or else a mild solution of corrosive sublimate (say 1–4000). These solutions have the additional advantage of making doubly sure the aseptic condition of the flaps.

Third stage, formation of suitable flaps.—Circumstances often influence the surgeon as to the kind and shape of flaps in any given case, but if he can operate at a point of election instead of a point of necessity, either the circular skin flap, modified, if necessary, by two lateral sections, which converts the amputation into one of an antero-posterior skin-flap of equal length, or Teale's long anterior and short posterior flap, or the bilateral flaps, will be found best in all amputations. Whatever shape may be decided upon, all flaps should consist of skin and connective tissue only, and not muscle. At all points of the body where pressure is made against bone, skin alone covers the part; the os calcis and the olecranon, the tuberosities of the ischium, are good examples of this. If muscle be included in the flap on the supposition that it will form a soft cushion over the divided end of the bone, the fact that the muscle soon completely atrophies takes away the supposed advantage. If the muscle is included there is considerable bleeding from the cut surfaces and there is a much larger wound for healing.

The surgeon having decided on the kind of flap desired, everything is now ready to begin. One assistant gives ether, another hands the instruments, a third holds the limb to be removed, a fourth is responsible for the application of the tourniquet or the elastic bandage, and a fifth sponges and helps tie the vessels. Each assistant must understand his respective duties and he must not interfere with the duties of the others; thus the operation from beginning to end will be executed in perfect order, and with the least possible delay or suffering. The nurse should wash and wring out the sponges used during the operation; and what has been said of antiseptic preparation of the assistants must include the nurse.

The surgeon stands upon the right side of the limb to be removed, so that he can hold back the flaps with the scalpel, and in doing so he must remember to cut with his scalpel directed at right angles to the long axis of the limb, and the cutting edge slightly turned towards the part of the limb to be removed, and never towards the flap. In this way he cannot button-hole the flap, and the edge of the flap being cut at right angles to the long axis of the limb, will not slough, as it will do if the edge is cut obliquely. The flap should consist of skin and connective tissue and deep fascia down to the muscle; but it is not to include the muscle. The blood-vessels nourishing the flap run between the skin and the deep fascia, and if the edges of the flap be cut at right angles and not obliquely, the extreme edge of the flap is bountifully supplied with vessels. In dissecting up the flaps they should be held by the surgeon's fingers, and never by forceps, which contuse the flaps. The surgeon having dissected up the flaps to a convenient distance and holding the flaps back with his left hand, he is now prepared to make a circular section of the muscles down to the bones.

Before cutting the muscles an interosseous flap can be cut, as suggested by Linhart, of Würtzburg. The object of the interosseous membrane flap is to prevent the retraction of the tissues which carry the vessels up out of reach. A small catlin is thrust in close to the tibia and then carried down for about two inches parallel with the bone. The catlin should now cut across until it comes in contact with the edge of the fibula, and then upwards along the edge of the fibula to a point opposite to where the first incision was made. This will cut out a tongue-shaped piece of tissue composed of the interosseous membrane upon which and attached to which the anterior tibial artery is found. This interosseous flap retracts more readily than muscles, and consequently, being cut two inches longer than the muscles, the flap with the artery will be found directly upon the face of the stump.

With a large amputating knife the muscles should be severed at a point just below the point where the base of the flap is attached. It is best to allow for a certain amount of contraction of the muscle after it is cut, and if the circular division is made as described, the cut surface of the muscle extends down so as to be upon a plane corresponding with the bone or bones. A double-tail retractor, or a triple-tail retractor if two bones exist in the extremity, is placed in front of the face of the stump between the bones so as to keep the muscle from being injured during the sawing of the bones.

Fourth stage, section of the bone.—The leg must be firmly held during the sawing, and the assistant supporting the part to be removed must avoid any pressure downwards, this movement being likely to

cause fracture of the bone, or any movement upwards, which is likely to bind the saw and prevent its free movement. When the femur is to be sawn the saw should go through the linea aspera before completely severing the bone, and this will avoid splintering the edge of the linea aspera. When two bones are involved, as the tibia and fibula, they should be sawn upon the same level, remembering to saw through the smaller of the two bones first, so as not to disarticulate the fibula at its upper end. Volkmann has found that rapid sawing causes so much friction that great heat is generated, which produces circular necrosis at the end of the bone. The saw should be used gently and drawn lightly from heel to toe, and the sawing should be performed under continuous irrigation, so as to prevent the development of too much heat from friction. The surgeon should now pass his finger over the surfaces which have been sawn, and remove by Liston's bone-forceps any slight projection or splinter, and then bevel the edge of the tibia so that its sharp crest will not perforate the skin when the flap is drawn down over the face of the stump. If desirable, a small piece of periosteum can be pushed up from the bone before the saw is applied, and then the periosteal flap can be stitched over the front of the bone by a catgut suture. This procedure was formerly in vogue to prevent osteo myelitis, as the periosteal flap united by primary union, so that no suppurative discharge could be absorbed by the medulla.

Fifth stage, provision against hæmorrhage during the operation.—The surgeon should secure and tie the main artery first; then the other arteries in turn according to their sizes. Do not tie veins unless it is necessary. The artery forceps should embrace only the divided end and open mouth of the artery, and the ligature should involve the vessel only, none of the surrounding tissues. Catgut is preferable for ligatures, as it possesses the especial advantage of allowing the stump to be closed. If torsion is employed, the advantages are still greater; but this method is only safe in the hands of surgeons who understand its use thoroughly and are skilled in its practice. After all the vessels are tied or twisted some oozing may occur. This is controlled by hot irrigation, or by packing into the stump a number of antiseptic sponges wrung out in hot bichloride of mercury.

After hæmorrhage is completely arrested and the wound-surface perfectly dry, the last and sixth stage is entered upon, and this leads us to a discussion of a most important subject, viz.: *the treatment of the wound.* The different methods which have been devised are numerous, and many of them complicated. I pass by the Guérin pneumatic occlusion method and the Maisonneuve pneumatic aspiration method as too difficult and complicated for the use of the general practitioner. The cold water dressings as suggested by Liston, and the continuous bath recommended by Langenbeck, are methods to be employed in exceptional cases. Dressings of stumps, for practical purposes, may be reduced to one of two methods: either the closed or the open method. The great majority of cases should be dressed by closing the wound. In treating an amputation wound by the first method, it is assumed that all the details of antiseptic surgery have been carefully carried out; otherwise failure to obtain primary union is certain.[1]

In dressing a stump with a view to obtaining primary union, it is often advantageous to defer permanently closing the stump for several hours. This is especially indicated where there is much oozing from the surface of the wound. By deferring the final dressing for a few hours the wound is not closed until it is perfectly dry, and until a delicate film of coagulated blood glazes the surfaces.[2] Whenever the final dressing has been deferred I have irrigated the wound thoroughly with a hot solution of bichloride of mercury, and then packed with a large number of small sponges which have been taken immediately out of a glass vessel containing a solution of hot bichloride of mercury. The sponges should be wrung out as dry as possible and introduced into the wound, and the flaps brought over the sponges, and then a heavy bandage of antiseptic gauze placed over the stump with but moderate compression. In five or six hours, the patient in the meantime having reacted from the shock, is now perfectly conscious, and will permit, without suffering any pain, the completion of the dressing.

The bandage should be carefully removed from the stump and one by one the sponges removed from the wound; and all oozing having ceased, a thin film of iodoform can be dusted or sprinkled over the flaps and upon the face of the stump. A drainage tube of *red* rubber—because it contains no sulphur—should be placed in contact with the face of the stump, brought out at each angle of the wound, and cut off flush with the surface of the skin. The flaps should now be approximated and the sutures tied. Catgut should be employed; but three or four silver sutures should also be used, because the catgut often absorbed too quickly and the flaps are not held firmly. The silver relaxation sutures can be removed as soon as they show evidence of the slightest irritation. A button or silk suture or horse-hair can be used instead of the silver wire if the surgeon prefers. If the edges have been accurately approximated a thin film of iodoform can be sprinkled over the line of incision, and then the protector and then the hospital gauze lightly placed over the stump. The gauze next to the wound should be wet, having previously stood in a hot solution of bichloride of mercury or carbolic acid. The gauze should be wet, because dry carbolic gauze is not antiseptic unless it is warm. The absorbent cotton can be now placed over the entire stump and held in place by an antiseptic bandage. Over this dressing layers of antiseptic gauze can be placed with the Mackintosh; the latter can be dispensed with as a rule. The superficial dressing of hospital gauze should be dry and quite firmly

[1] These details of wound treatment have already been discussed in a previous lecture, a report of which may be found in THE JOURNAL of August 21, 1886, and it is unnecessary to repeat what has been said in regard to the technique of an aseptic surgical operation.

[2] Some surgeons have objected to deferring the permanent dressing several hours because the patient has come out of the influence of the anæsthetic, and the final dressing must be done while the patient is conscious. The objection is overruled if the sutures are introduced through the flaps but left hanging loosely. There is no pain in the mere approximation of the flaps.

bandaged to the stump, which should be placed upon a splint and bandaged to it.

In three days, if everything has gone on well, the dressing should be changed under irrigation so as to remove the drainage tubes, and a new dressing applied in the manner already described. This second dressing can remain unchanged for a week, and then a new and final dressing can be applied. It is thus evident that by this method all the great principles of wound treatment have been observed.

In exceptional cases, however, it is not best to close the wound because primary intention can not be obtained on account of the peculiar conditions of the wound. In cases of compound fracture, attended with great crushing of bone and soft parts, there is occasionally some contusion over a small area of the wound, which might prevent primary union, but is not sufficient to prevent a satisfactory healing by secondary intention, and thus securing a longer stump. Another circumstance where closing the wound is not best, is in an amputation of emergency, at a place where antiseptic dressings can not be secured immediately. I believe that under such circumstances no attempt should be made to secure primary union, because all the essential conditions are absent, and a failure under these circumstances would expose the patient to serious risks from septic infection. Half-way antiseptic surgery is more dangerous than full exposure of the wound to the air. I believe that leaving the wound fully exposed to the air is not only safe, but is in reality the best method where all the conditions of rigid asepsis cannot be controlled. During the past session I have treated two stumps by the open method, and both of them did just as well as regards constitutional disturbance as the others. The open method has one disadvantage; the wound does not heal so quickly; but it heals satisfactorily in the end. In the open method the highest type of antiseptic surgery is found. The frequent use of carbolic acid renders the soil unsuitable for the growth of germs, the causes of putrefaction. The unobstructed flow of the discharge prevents the secretion becoming putrid. The exposure of the wound permits evaporation, which renders the discharge too highly concentrated for the favorable growth of these germs; and, finally, as Pasteur has shown, this same free exposure, by the supply of oxygen to the microörganisms, prevents their disorganizing and breaking up the albuminous compounds in their struggle for one of the essentials of their being. The preservation of the albuminous compounds diminishes, and even prevents, the processes of putrefaction. The exposure of the wound lessens the chances of decomposition by causing it to become dry.

There is no real inconsistency between antiseptic surgery, as now understood, and treating a wound openly. A careful study of the principles of antiseptic surgery shows that both methods are in accord with its precepts, only that in the open method the wound heals by secondary union, and still the wound is aseptic In the open method the stump is irrigated every few hours with carbolic acid solution. Balsam of Peru is used to stimulate the granulations, and in ten days the granulating surfaces upon the flaps are approximated, and healing takes place between these two granulating, instead of between two fresh, surfaces. In epidemics of diphtheria I have found the open method preferable, because a healthy granulation surface is a barrier to the entrance of septic poison.

In conclusion, gentlemen, endeavor to obtain primary union in all amputations by using every detail requisite to success. When the conditions are unfavorable, aim at secondary union by the open method; but remember that even if the open method is best suited to certain cases, it is still antiseptic surgery in its highest and broadest sense, and that good judgment and a due regard for the best interests of the patient has persuaded you to adopt the method which is less brilliant in its technique, but more brilliant under such circumstances in its ultimate results.

ORIGINAL ARTICLES.

PNEUMATIC DIFFERENTIATION AND THE PNEUMATIC DIFFERENTIAL PROCESS. ITS DEFINITION AND GENERAL SUGGESTIONS FOR ITS APPLICATION.

BY HERBERT F. WILLIAMS, M.D.,
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The term "pneumatic differentiation" was first used by the author, in an article which appeared in the *New York Medical Record*, January 17, 1885. In this article, or in a subsequent one[1], certain improvements were spoken of which promised to enlarge the scope of the process there described. This paper is written for the purpose of giving a fuller description of what has now come to be known as the "Pneumatic Differential Process."

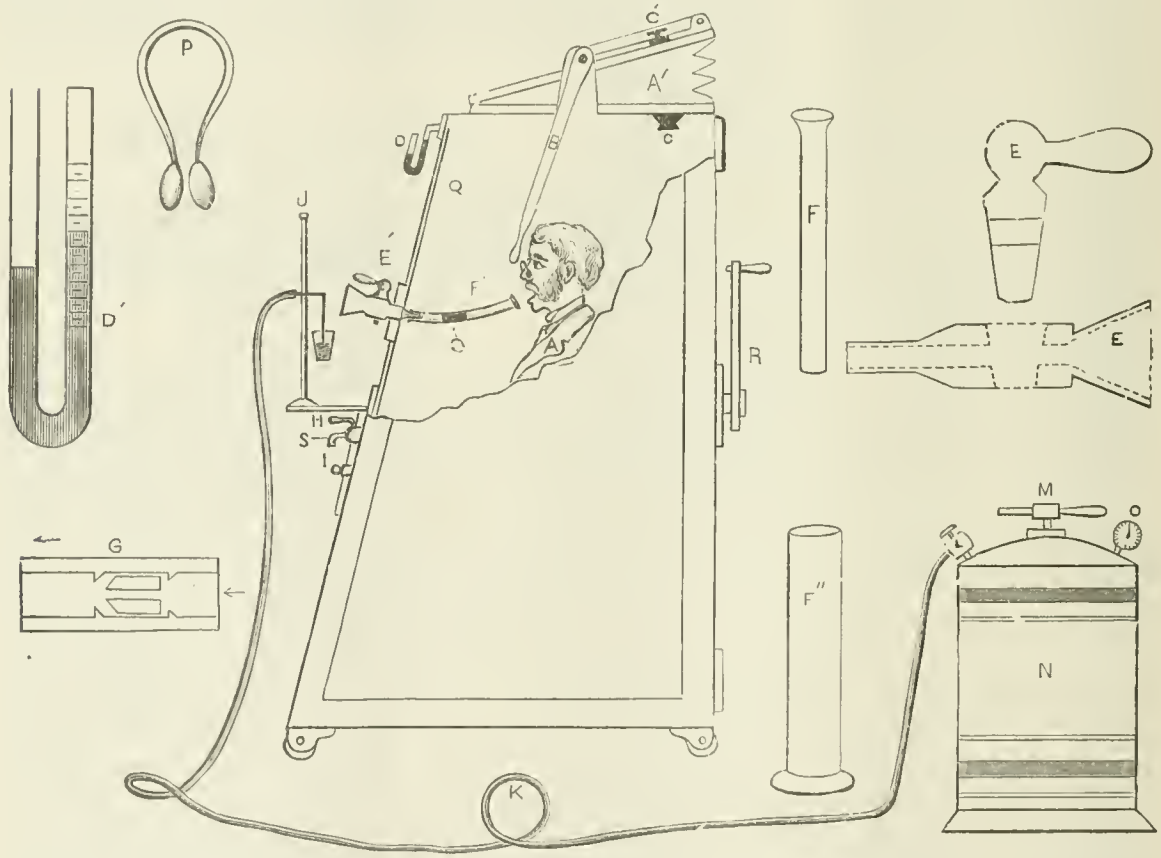
Pneumatic differentiation is the mechanical expression of the thoughts and ideas of two men, a physicist and a physician. However parallel their work may have been to earlier investigators, the labor has been entirely independent, and perhaps for this reason there comes a point of divergence which carries their investigations considerably beyond the labors of Hawk, Lange, Junod and Waldenberg. The cabinet in the hands of lung specialists is capable of nice and skillful adjustment to the various anomalies and contortions that are found where diseased action has not been impeded, and under the control of such in hospitals, sanitaria, or at the residences of patients, a certain range of cases will yield to treatment that might fail of permanent benefit in office practice. But the cabinet and its operation are equally well designed for the larger field of the general practitioner, who from the nature of his work, sees the earliest manifestations of pulmonary disease, and can easily arrange with, perhaps, a younger brother practitioner to secure to his patients the benefit that such a radical treatment will confer at the inception of diseased action.

[1] Which appeared in the New York Medical Journal, Oct. 3, 1885.

Description of Terms.—The pneumatic differential process can be said to comprise six principal acts, which may be enumerated as follows: *First*, residual air expansion; *Second*, forced inspiration; *Third*, inspiratory differentiation; *Fourth*, respiratory differentiation; *Fifth*, expiratory differentiation; *Sixth*, forced expiration.

These acts can be produced upon a patient when he is inclosed in a cabinet of suitable construction. The following diagrams may assist in the description of the several acts:

The valves c and c′ are so constructed that they can be arranged to produce either rarefaction, compression, or alternate rarefaction and compression of the air in the cabinet. The bellows a, is of about



A, patient. A¹, bellows. B, lever to operate bellows. C, cabinet valve. C¹, bellows valve. D, manometer gauge. D¹, same half size, showing 4-10 in mercury. E¹, breathing faucet in place. E, same detached, showing construction. F, breathing tube. F¹, same in position. F¹¹, bath jar for holding same in aseptic fluid. G, artificial glottis. G¹, same in position. H, adjustable stand for holding vaporizer. I, set-screw for holding same in position. J, vaporizer. K, rubber tube leading to condenser. L, regulator, to control flow of air at any given pressure. M, pressure pump. N, condenser. O, gauge for compressed air condenser. P, nose clip, to compel oral respiration. Q, glass front to cabinet. R, lever for opening same. S, accessory—stop-cock.

$\frac{1}{30}$ the cubic capacity of the cabinet, and of a calculated tensile strength somewhat less than the breaking strain of the cabinet. The artificial reversible glottis G, is so constructed that it can be placed in the breathing tube either at the oral end where it can serve as a mouth piece, or it may be placed farther down if preferred. It is provided with a perforated valve, the circumference of which has been ground to its opposed bearings. Its backward play being checked by two shoulders in the tube. An air current flowing in the direction indicated by the arrows would force the valve into its ground socket, and the circulation of air would continue through the central perforation. The air current being reversed would drive the valve against the shoulders, and the circulation of the air would become free around the valve. Hence, the valve can be used to produce free inspiratory and restricted expiratory aperture, or the reverse. The breathing faucet e and e′ may serve to produce either free or restricted inspiration or expiration, by fully or partially opening the stop-cock, but the action is not automatic, and hence, it can only be utilized when we wish to modify an individual inspiratory or expiratory act.

The breathing tube, F and F, is designedly of simple construction, which allows easy and complete cleansing. The oral end is expanded and comfortably fits the mouth, being placed between the teeth and lips. The patient while breathing taking care to open the jaws, but keeping the lips firmly around the flange.

1. To produce *Residual air expansion* valves c and c′ are set for rarefaction. The patient is told to make a full inspiration from the air in the cabinet,

and while he is maintaining himself in this act with his mouth and glottis open, rarefaction can be produced to the extent of from 1–2 inches. This will expand such air as may be occluded behind bronchial plugs. If we wish to expand residual intervascular air, the glottis should be gently closed after full inspiration. The patient can indicate by a prearranged movement of the hand, when he is prepared for the removal of the air about him, which, on account of the relative size of the bellows to the cabinet, can be effected in two or three strokes of the lever.

II. *Forced Inspiration.*—The valves c and c′ to remain as before. The rarefaction may be from $\frac{2}{10}$ to 2 inches. The patient now takes the tube in his mouth, and if the higher rarefaction is used the breathing faucet is partially opened and the weight of the normal air seeking to establish an equilibrium with the expanded rarefied inter-pulmonary air, will produce an easy and effectual expansion of the lungs. The expiratory act may be made into the cabinet. This will decrease the rarefaction in the cabinet, and as each respiration proceeds, the breathing aperture in the faucet may be opened wider, or the rarefaction may be kept high by an occasional stroke of the bellows. At a pressure of from $\frac{2}{10}$ to $\frac{6}{10}$ the patient may proceed to the third act.

III. *Inspiratory Differentiation,* which is effected by maintaining continued respiration through the breathing tube during the contrasted air pressures.

This converts the normal active inspiratory act into a passive movement, while the ordinary passive expiration becomes active to a degree dependent upon the extent of differential pressure. The nose-clamp should be used in this act if the posterior pharynx cannot be controlled, to prevent the escape of air, which will not only lower the rarefaction, but more seriously interfere with the full intent of the act, which compels the respiration of an elastic column of air, which after two or three inspirations secures a constant and even expansion from buccal cavity to the remotest alveolus. Radiation of body heat or any slight escape of air into the cabinet will after a few moments reduce the rarefaction, but this can be kept up without disturbing the treatment by the withdrawal of the air syncronously with the inspiratory act. If air is withdrawn from the cabinet when the patient is making an expiratory effort, the amount of energy which he unconsciously exerts to expel the lower differential pressure will be inadequate to overcome the increase. It is not necessary, however, to remove such a large quantity of air at once, for, by the gentle and occasional operation of the bellows, the rarefaction can be maintained, constantly at one point.

IV. *Respiratory Differentiation.*—This has become the principal act of the entire process[2], and its scope will not be reached until we are provided with special apparatus for the operation of its full principle in producing artificial respiration in all forms of suspended animation.

For the treatment of pulmonary disease an excursion of one inch Hg. is sufficient. The valves c and c′ are arranged to produce alternate rarefaction and pressure. The patient now takes the same position as for inspiratory differentiation, having been previously instructed to conduct his respirations syncronously with the movement of the lever, or inspiring in response to the word "in" and expiring at the word "out" as enunciated by the operator. The bellows are closely shut, air inside and outside the cabinet is at equilibrium. The patient takes the breathing tube in his mouth at the word "in," he makes an inspiration. The operator at the same instant depresses the lever and opens the bellows wide, thereby withdrawing about $\frac{1}{30}$ of the atmosphere less the cubic displacement of the patient, and producing a corresponding depression in the mercury. The accessory stop-cock is now opened to allow air to rapidly flow into the cabinet, when equilibrium is again established, which will take place in a few seconds, the accessory stop-cock is closed. The word "out" is called, and the patient makes an expiration. The operator recovers the lever and compresses the air in the cabinet to the limit of the contents of the bellows, which drives the mercury up the left arm of the manometer. These movements can be repeated from five to fifteen times per minute. The inflow or outflow of the respiring air can be retarded by the use of the artificial reversible glottis as already described. Further reference to this will be made in treating of its application to diseases. Should the entire contents of the bellows produce too great a force, the patient may commence respiration with the bellows half open, when its operation, as before, will give a reduced variation each way.

V. *Expiratory Differentiation.*—The valves c and c′ are arranged to produce pressure inside the cabinet, with $\frac{2}{10}$ to $\frac{4}{10}$ the patient will find his inspiration difficult and his expiration easy, just to the extent of the reverse of the inspiratory differential act.

VI. *Forced Expiration.*—Valves c and c′ same as in last act, high pressure from 1 to 2 inches is produced in the cabinet. The patient takes his inspiration from the cabinet air, but makes his expiration through the breathing tube, which the operator must close while the patient is inspiring. The bellows must be operated to keep up the pressure in the cabinet, for the patient is now reducing the pressure by the emptying of his lungs ten to twenty times per minute.

To these six acts another might be added, viz: *Residual Air Compression.* It differs from the last act in that the patient makes a full inspiration at equilibrium then closes glottis, when the operator rapidly produces pressure from 1 to 2 inches. This is exactly the reverse of Residual Air Expansion.

General suggestions for the application of these several acts.—Each patient is to be furnished with a separate breathing tube and jar, labelled for identification, which is to be filled with an aseptic solution in which the breathing tube is to be immersed when not in use. The breathing faucet should be cleansed and disinfected after each treatment; the cabinet should be kept cleansed and frequently disinfected.

[2]Dr. William B. Wood, N. Y. Medical Journal, March 5, 1887.

This can be easily accomplished by allowing the spray or vapor to flow into the cabinet with the door closed. The air should at least be fanned out after each treatment. Cuspadores should be cleansed and disinfected after each treatment—or separate ones supplied each patient. The patient should be so placed in position that a good free movement of the thorax and abdomen can be made.. The height of the chair and the distance from the breathing tube should prevent the possibility of the patient acquiring the habit of leaning forward while taking treatment. In warm weather or in heated rooms the cabinet doors should be opened occasionally during the sitting, and the patient gently fanned. A towel should be pinned about the neck of the patient, this should be of sufficient length and breadth to cover the lap, abundance of these should be provided and a fresh one supplied for each treatment. Every detail of refinement not only catches the attention of the patient, but gains his full confidence, and guards him against contamination, contagion and infection.

Patients applying for treatment should be classified if possible, into the following divisions: 1. Developmental, a, connection of faulty respiration, b, calisthenics; 2. Acute non-infectious; 3. Chronic non-infectious; 4. Acute infectious; 5. Chronic infections.

Where it is possible to pre arrange sittings, patients suffering from acute affections should follow each other, and precede the chronic cases, and es pecially the chronic infectious cases. Scrupulous attention should be given to the cleansing and disinfection of the cabinet, and such accessories as has been in use in such cases. Germicidal sprays and vapors should never be omitted in the treatment of infectious (tubercular) cases, even by those who do not sympathize in the belief of the assertion of their germicidal power.

SUGGESTIONS FOR TREATMENT.

First, as a means of Calisthenics.—Respiratory differentiation should be used at first. This may be conducted with the breathing faucet entirely open, but as the patient's respiratory power increases, it may be but partially open, the alternation of pressures can be made greater, and both respiratory and expiratory acts can be maintained until the pressures are equalized. Should there be a tendency to prolonged expiration, a portion of the sitting should be conducted by forced inspiration with high vacuum and a contracted inspiratory aperture.

The inspiratory muscles may be strengthened by maintaining respiration by expiratory differentiation, with a pressure of $\frac{2}{10}$ to $\frac{4}{10}$, expiratory strength may be acquired by the maintenance of the full inspiratory differentiation. This act should only be used when hæmorrhage has occurred or is anticipated, and in pulmonary congestion. In uncomplicated emphysema gentle respiratory differentiation; expiratory differentiation and forced expiration should be used. When there is complicating bronchial catarrh, the treatment may be interspersed by inspiratory differentiation, or forced inspiration with low vacuum $\frac{2}{10}$ to $\frac{4}{10}$, for the purpose of applying appropriate remedial agents. In bronchiectasis expiratory differention and forced expiration, with high pressure, should be the principal treatment. In simple laryngitis, trachetis, and bronchitis, inspiratory differentiation, forced inspiration, with low vacuum $\frac{2}{10}$ to $\frac{4}{10}$, where spray is projected by means of forced inspiration, calculation must be made upon its deep penetration, and sedative, lubricating and emollient agents alone should be used. Hot spray is more grateful to some conditions than the cold blast.

Acute inflammations of the respiratory tract occurring in persons of full respiratory power, do not well tolerate irritating sprays or vapors, and high pressures are unnecessary. Patients whose laryngeal, tracheal and bronchial mucous surfaces have become inured to the frequent passage of catarrhal inflammatory, and degenerative products are more tolerant to the stronger disinfectants, and where œdematous conditions of the bronchial mucous membrane can be inferred. Lugol's solution, 30–50 per cent may be occasionally used with impunity and benefit.

Ordinary spasmodic neurotic asthma is best treated by forced inspiration, or respiratory differentiation; inspiratory differentiation may be possible, but high vacuum may precipitate a seizure. This act may be made possible by the introduction of a proper anti-spasmodic agent. As to the various functional disorders of the lung, produced by pleural effusions or exudates, the non-aërating lobes and lobules following croupous and catarrhal pneumonias, regional blood stasis due to bronchial occlusion. These conditions should receive as preliminary residual air expansion, or compression, or both, followed by respiratory differentiation and then by forced inspiration, and the sitting concluded by inspiratory differentiation. The sleeplessness of anæmia, anorexia, chlorosis and the amenorrhœa dependent upon these conditions, will all receive direct benefit from inspiratory differentiation.[8] Some forms of heart disease should respond to the same act.

(*To be concluded.*)

ENTERECTOMY FOR STRANGULATED HERNIA. WITH REPORT OF A CASE.

BY N. B. CARSON, M.D.,
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Has the introduction of antisepsis into surgery improved the results of herniotomy? It is claimed by some that the mortality has been lessened by antiseptic methods. Hamilton says: "Mr. Hey states that he lost three out of every five cases upon whom he operated, but it is my impression that the mortality remains about the same as when Mr. Hey wrote, nearly one hundred years ago."

Bruno Schmidt, (Leipsig)[1] states that the mortality of strangulated hernia before the introduction of Listerism was 45.8 per cent., while the mortality since its introduction has been 36.6 per cent., a re-

[8] E. Tiegel, New Yorker Medizinische Presse, February, 1887.
[1] Verhaud. der. Deut. Gesells. für Chirurg. 12th Cong.

duction of 9.2 per cent.; an improvement not commensurate with the improvement in other abdominal operations. Schmidt accounts for this failure by the parts being already necessarily septic on account of their relations. P. S. Connor[2] reports thirty-three cases of herniotomy, with a death rate of 63.6 per cent., and in but one of these *cases did he attribute the cause of death to the wound*, and in that case tetanus was the cause. From this it will be seen that the improved methods of to day have done little for this operation.

When we examine the cause of this fearful mortality we find: Shock, peritonitis, paralysis, hæmorrhage, tetanus, erysipelas, and pyæmia set down as the immediate causes, while stricture plays its part later on. The number of deaths from shock, comparatively speaking, is not very great, while peritonitis, generally septic, plays the most active part; and why this is so can be very readily explained when we consider that the bowel is often returned into the abdomen so soon as it begins to show signs of returning circulation and while it is still in a pathological condition. The following statement clearly explains my views: "Strangulated gut returned in the condition, even if there be no openings, and although it has been well washed, is still septic, and the secretions from its surface will set up a septic peritonitis."

Another very frequent cause of peritonitis, and one that is not anticipated as likely to occur as often as autopsies prove it, is perporation after return. Most cases of strangulation come to the surgeon after the hernia has lasted many hours and often days, and after much time has been spent and much damage done in efforts at reduction. Consequently the bowel is so altered in structure that it is with difficulty recognized when cut down upon. As a result of this, if the part is not already destroyed in its entirety, it is most frequently so softened and changed at the line of constriction that little presure is necessary to cause rupture, which often occurs, as proved by autopsies, after its return to the abdomen. Personally I have not been able to verify this, but I recall two cases, one in my own practice, and one of a friend whom I assisted in the operation, wherein the condition of the bowel was such that its return seemed of doubtful propriety; but as evidence of returning circulation, in both cases, soon became apparent it was decided to return it, and as a result after some hours symptoms of rupture supervened and a fatal peritonitis followed. Here the line of constriction was marked, and no doubt if autopsy could have been made we would have found the bowel open where it had been softened by the tight and long-continued pressure. Often these openings are so small that they escape the hasty inspection made at the time of the operation. Gross says: "At the seat of stricture the bowel is usually ulcerated or pierced with apertures commonly so small as hardly to admit of the escape of gas, much less of mucus and feces." In this way many cases of peritonitis can be accounted for, as gas alone without feces is sufficient to set a septic inflammation.

Paralysis of the bowel as the result of strangulation is another cause of death that must be considered. All authorities on strangulated hernia give it as a cause of sufficient occurrence to be noticed. Connor[3] cites two cases wherein he found this condition, and as a consequence of the tight constriction paralysis of the engaged part of the bowel; the peristaltic action remained arrested, the vomiting continued, and the patient died just as if no operation had been performed. As to the other immediate causes of death little need be said, as they are so infrequent as to require no more than passing notice.

Stricture after strangulated hernia is due to cicatrization, says Mr. Treves, and follows upon ulceration, or limited gangrene of the involved bowel. He says he has found four recorded examples of this stricture, in addition to several specimens to be seen in some of the London museums. This condition may follow the relief of the hernia in from one month to some years, and may involve any part of the alimentary tract.

Having now considered the causes of death, the question naturally arises how are we to combat them? Gross says: "It has been proposed when mortification has been limited, to replace the bowel on the supposition that before the slough can separate, the parts immediately around the seat of the disease will have contracted firm adhesions to the neighboring viscera, thus protecting the peritoneal cavity against fecal effusion." He very justly doubts the propriety of such a proceeding, and says he would certainly discountenance it. An example on the part of nature to protect herself is cited by Mr. Treves, wherein Mr. Travers tied a ligature around the small intestine of a dog. The animal died on the third day, and the ends of the bowel were found to enter a kind of cyst, formed by lymph from the peritoneum. While it is true that nature makes many efforts at restoration, she does not succeed sufficiently to be relied upon, and we naturally look in what direction we can best subserve her interests. The great success attending all abdominal operations inclines us to seek in that direction, and the question is asked and answered by Mr. Sheen[4]: "Should herniotomy from within the abdomen be performed in cases of strangulated hernia? This has hitherto hardly been a question for consideration in the minds of most surgeons when about to operate, but I think that in the future it is well that it should be."

As the following case, which occurred in my own practice, bearing upon the subject in question is of more than ordinary interest, I will introduce it here.

N. R., American, aged 12 years, entered my service in the St. Louis Mullanphy Hospital December 12, 1886, with a strangulated inguinal hernia of several days' duration. He stated that on the Wednesday preceding his coming to the hospital (which was on Monday) while skating he was suddenly seized with a severe pain in the abdomen, which he did not locate definitely. He returned home, and his mother administered simple remedies which failed to bring relief. He noticed then for the first time a lump in the right groin about the size of a hickory nut. His mother's

[2] Medical News, Dec. 4, 1886

[3] Medical News, Dec. 4, 1886.

[4] British Medical Journal, February 19, 1887.

attention was called to this, but as it had been there before, and had always gone away of itself, nothing was thought of it. The next day, being no better, a physician was sent for, who ordered opiates, hot water injections and warm applications to the abdomen. From the opiates he obtained only partial relief, and the injections brought away only a few scybala. Vomiting of a dark brownish fluid, free from odor, supervened on the second day, and continued up to the time of his coming to the hospital. When I saw him, in the afternoon, after his entrance into the hospital I found him with a good expression, with a pulse of 100, regular and of good volume, temperature 98.4° F. The abdomen was distended and showed plainly the convolutions of the small intestine. There was but little pain on pressure. In the right groin was an inflamed tumor about the size of a large hen's egg, painful to the touch and pitting on pressure. The tongue was moist and covered in the centre with a thick white coating, while the edges and tip were red. The bowels had moved last on the morning of the accident. There had been no vomiting for some hours. As the symptoms were not urgent I concluded to defer any operative procedure until next morning when his parents would be present to give their consent.

The next morning his condition had not materially changed. His expression was a little more pinched, his pulse was 112, still regular, but not as good volume as the evening before. Temperature 100° F. The tongue was a little dry, but otherwise unchanged; the abdomen was a little more tense; there was no noticeable change in the tumor, and no recurrence of the vomiting. With the consent of his parents it was decided to cut down upon the tumor, and if the bowel was not already open to incise it and allow the escape of the fecal contents.

The sack was opened; there was an escape of two or three drachms of sero-purulent fluid. The knuckle of intestine was destroyed beyond recognition. When this was opened, there was an escape only of very offensive mucus and serum. The parts were now thoroughly washed with a solution of carbolic acid 1-20, and the examination proceeded with. The stricture was so very tight that I felt sure the bowel had been cut through, and if any attempt were made to divide the stricture the adhesions would be broken, and fecal extravasation result; yet if left alone with the hope that the obstruction might be spontaneously removed, the gut might be torn at the site of stricture, as happened in the case of Mr. M. Banks[6] when, after six days of favorable progress, when the bowel had been left *in situ*, it ruptured, and in an hour or two the patient was dead. After carefully considering the case I decided to open the abdomen, resect the bowel, wash out the cavity and thus give my patient, as I thought, the best chance for recovery.

The abdomen was opened in the median line, the dead part of the intestine cut off close to the external ring, and the wound again thoroughly washed with the carbolic solution, and thoroughly dusted with iodoform. I then introduced my hand into the peritoneal cavity, and my finger entered an opening in the intestine at its exit through the external ring, which doubtless resulted from the very slight manipulation necessary. I then grasped it so as to prevent the escape of its contents, and by careful traction drew it out through the median opening. I then discovered that the entire circumference of the bowel had not been strangulated, but only about four-fifths of it, while the remainder had been drawn so tightly to the border of the ring as to completely occlude it. The part above the constriction was distended, and much congested for some inches, while the part below was collapsed. An assistant held the bowel both above and below the opening, the intestinal contents having been pushed up and down, so as to prevent their escape. The abdominal opening was held together, and it and the exposed bowel were protected with hot towels. I then cut away the injured part of the intestine, being careful to reach healthy tissue, and a triangular piece of the mesentery, the free border of which was allowed to project slightly beyond the resected border of the bowel; this was done to prevent sloughing of the cut edges of the bowel, an accident which too frequently interferes with the success of the operation. The edges of the mesentery were first brought together with a continuous suture of carbolized silk No. 2. Then the intestine at its mesenteric junction was carefully adjusted and held by fine interrupted silk sutures. The mucous membrane was next sutured and subsequently the serous and muscular coats. For this the Lembert suture was used. The parts were then thoroughly washed and returned into the abdomen, which was afterwards cleansed with hot water. The opening in the groin was again washed, dusted with iodoform, a bone drainage tube introduced, and closed with catgut suture. The toilet of the peritoneum having been made, the abdominal opening was closed with silk sutures, bichloride and iodoform dressings applied, and the patient returned to bed and surrounded by hot bottles.

Reaction was complete in a few hours; and as the progress of the case to complete recovery was uninterrupted, it will be unnecessary to give it in detail. The highest pulse rate was 120; the highest temperature reached was 100°. The bowels moved spontaneously on the morning of the fifth day, a healthy stool, free from blood, being the result. The only complaint was some colicky pains which gave trouble for some days. He left the hospital six weeks after the operation, and has remained well ever since.

Considerable shock followed the cutting away of the disorganized bowel, and required the hypodermic use of brandy and ether; the pouring of hot water into the belly aided the reaction, although that had already advanced before this was done. Shock, after the cutting away of the dead bowel, is one of the chief dangers of the operation, and unless the patient is in a condition to resist this, it is better to postpone the resection of the dead part until his condition can be improved. I would advise that just before this part of the operation is reached a full hypodermic injection of brandy and morphine, or ether, be given, in order to prevent this shock as much as possible.

[6] Medical Times and Gazette, May 9, 1885.

Another danger—an insurmountable one—is the time required for the operation; in most cases two hours or more. In completing this operation I was a little less than two hours. Had I been fully prepared for such an operation I would have made it in a little over an hour. This is one of the advantages of the abdominal opening. We are thus enabled to reach the parts better, and by so doing hasten the operation.

The questions now arise, can we lessen the great mortality from herniotomy? and how can we do it? After carefully considering the causes of death in these cases, I think the questions can be answered affirmatively, by opening the abdomen and resecting at once the injured bowel in all cases where there is any doubt of the possibility of a return to a healthy condition, provided the patient is able to withstand the shock and long-continued anæsthesia. If, however, there seems a probability of healthy reaction, allow the injured portion to remain outside, covered with hot aseptic towels, until this question can be positively decided. If it is already dead and the condition of the patient unfavorable for immediate operation, open the bowel and await the improvement of the patient.

Resection for gangrene of the bowel has been performed, according to Reichel,[6] 56 times, with 29 deaths; a percentage of 51.44. Treves adds: "It will be seen that the chief cause of death in these operations is peritonitis, and it must be owned that this peritonitis is usually dependent upon some flaw in the details of the operation." After naming these causes he further says: "It is not, therefore, too much to expect that the mortality of the operation may be very greatly diminished by improvement in the details of the operation." Since Reichel's tables were published, in 1883, I have collected from journals and other sources twenty-one cases of resection of the intestine. Of this number eight died and thirteen recovered (one with an artificial anus). These cases are shown in the following table:

Analysis of the above cases shows that death was caused by shock in 3, septic peritonitis in 5. At time of operation 7 were moribund, 4 were in bad condition, 10 were in fair and good condition. Of the latter only 1 died, and that after 8 days of favorable progress, from septic peritonitis caused by ulceration of a suture. Laparotomy was done 6 times with 3 deaths and 3 recoveries. In 2 the patients were moribund, and in the third there was ulceration after 8 days of one of the sutures. In 5 the resection was secondary, with 1 death.

In regard to the treatment of gangrenous intestine: Shall we resect the dead part at once, or shall we incise, and resect later? Statistics favor the secondary operation, but I think when we examine into the causes of death, we can readily explain why it is so. It will be seen that of the 21 cases cited above 8 only were in good, and only 2 in fair condition. Of this number only 1 died, and that was a case of

NAME OF OPERATOR AND WHERE REPORTED.	No. of Cases.	Recoveries.	Deaths.	Primary Resections.	Secondary Resections.	Condition of patient at time of operation.	Part removed.	No. of inches.	Laparotomy.	Cause of Death.	REMARKS.
D. V. Dean.	1		1	1		Moribund.	Ileum			Shock.	Not reported.
H. H. Mudd.	3	1	2	3		{ Moribund, 2 / Fair, 1	"	5, 5, 3.		Shock, 2.	" "
W. H. Folker, Brit. Med. Jour., Aug. 15, 1885.	1	1		1		Bad.	"				Intestine stitched to opening, as condition of patient would not allow complet'n of operat'n
R. Parker, Liverpool Med. Jour. January, 1886.	2		2	2		Moribund, 2.	"	14 in 1	2	Sep. peritonitis, 2.	
M. Banks, London Lancet, April 25, 1885.	1	1		1		Good.	"	3	1		Hernial opening extended to allow return of bowel.
J. C. Stewart, Am. Jour. Med. Sciences, Jan., 1886.	1	1		1		Fair.	"	4			
J. A. Wyeth, N. Y. Med. Jour., March 19, 1887.	1	1			1	Very bad.	"	2½	1		Bowel was left in place 13 days, until condition of pat. imp. sufficiently to allow resect'n.
R. S. Sutton, New Eng'd Med. Monthly, April, 1885.	1		1		1	Good.	"		1	Sep. peritonitis.	This operation was done for cure of artificial anus. Patient died after 8 days from septic peritonitis, caused by ulceration of one of the intestines.
N. Obalinski, Przglad. Lekarsk, xxv, 321.	5	3	2	3	2	{ Good, 3. / Moribund, 2	"			Sep. peritonitis, 2.	
W. Ström, Norsk. Mag. Laeg., 1886, 4, R. I., p. 573-79.	1	1		1		Bad.	"				
Crespi, Gaz. Med. di Roma, xii, March 1, 1886.	1	1		1		Bad.	"				
C. Villetti, Gaz. Med. di Roma, xii, March 1, 1886.	1	1		1		Good.	"				
Mazzuchelli, Gaz. Med. Ital. Lombard., Nov. 15, 1884.	1	1		1		Fair.	"				
N. B. Carson.	1	1		1		Good.	"	2½	1		

Shall the constriction be divided, or allowed to relieve itself? The most rational thing to do, I think, is to allow it to relieve itself, which it will do if let alone. A relief of all distressing symptoms generally follows the opening of the bowel. Unless we intend secondary operation. Leaving the bowel *in situ* is not altogether a safe procedure, as we have already cited in a case of rupture at the site of constriction. An accident, similar in some respects, happened in one of my early operations. Finding the bowel gangrenous I opened it and allowed it to remain in place. Some weeks later the patient, having entirely recovered from the effects of the operation, after eating largely of oranges and other fruit given by friends, he was seized with cramps, followed by symptoms of obstruction, from the effects of which he died two days later.

[6] Treves: "Intestinal Obstruction."

to proceed with the operation, it is only adding fresh dangers to interfere with the bowel, or attempt to relieve the constriction. By so doing we allow septic matters to enter the abdomen, an accident which must assuredly have befallen my case had I attempted it.

In conclusion, I would advise, in cases of strangulated hernia: 1st. When the bowel has been out some hours, and when it has been constricted sufficiently to render its return to a healthy condition at all doubtful, that it should be resected at once, if the condition of the patient is such that he or she can withstand the shock of the operation. 2d. If the condition of the patient is such as not to admit of immediate resection, I would advise that the bowel be incised and left *in situ* without interfering with the stricture, until such time as the condition of the patient will allow the more radical operation. 3d. If the resection is to be made as a primary or secondary operation, I would advise that the abdomen be opened in the median line, as by so doing, I believe, we enhance many times the chances of recovery of our patient, while we do not in the least add to the dangers of the operation.

It is unnecessary here to mention the many advantages of this procedure, as any one at all familiar with abdominal surgery can readily appreciate them.

OCULAR TROUBLES OF NASAL ORIGIN.

Read before the Chicago Medical Society, January 17, 1887.

BY BOERNE BETTMAN, M.D.,
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The close anatomical connection between the eyes and nose favors the spreading of disease from one organ to the other, by direct continuity of tissue, and also through the medium of the circulatory and nervous systems. Numerous pathological conditions of the eyes and lids are directly attributable to abnormal changes in the nose. Treatment directed to the ocular organs under these conditions will, as can well be understood, fail to influence them.

The lachrymal passage is the connecting link between nose and eye. The mucous lining of the lids and eyeballs is but a continuation of that, covering the inner surface of nose and tear ducts. This fact alone would suggest the rationality of seeking the cause of epiphora, redness of the lids and other abnormal conditions in the nose, provided the disturbances cannot be traced to local causes. Oculists have recognized this connection years ago. Mackenzie, Sœlberg Wells, Schweiger and almost all all other authorities, in enumerating the causes of dacryocystitis, do not fail to mention nasal affections. But none of them devote more than a passing notice to this subject. Not even Schirmer, Michels, De Wecker and Landolt, who have written perhaps the most exhaustive treatises on diseases of the tear passages and the lids, seem to have recognized the important rôle played by the nose in the production of the so-called reflex ocular symptoms.

It is only since the publication of Hack's[1] monograph on the operative radical cure of migraine, asthma, hay fever, etc., that the nose has been regarded as the source of certain ocular complaints which have baffled the efforts of the oculists. Hack in his introductory remarks calls attention to the fact that many persons suffering from "cold" are subject to temporary obstruction of the nose. This condition disappears often as rapidly as was its onset. An attempt to investigate the nature of this impediment to breathing will in many instances fail to reveal a pathological change. The introduction of instruments into the nose or other factors giving rise to a reflex action cause the symptoms to vanish. After repeated examinations made at various times, the physician will at last discover that the lumen of the nose is occluded by a swelling of the anterior end of the inferior turbinated bone. The mucous membrane may show a perfectly normal appearance, indicating that the cause of the swelling is due to changes underneath it, in the cavernous spaces, which become filled with blood, bulging the mucous membrane outwards until it at times reaches the septum. This swelling can give rise, as has been proven, to reflex neuroses in various organs, which can furthermore be allayed by destroying the seat of irritation by operative measures. Thus, Hack accounts for certain forms of migraine, asthma, hay-fever, supraorbital neuralgia, vasa motor reflexes of the skin of the face, epiphora, redness of the lids, turgesance of the conjunctival blood vessels and photophobia. Thickening (hypertrophy) of the mucous membrane, polypi, rhinitis, naso-pharyngitis, deviations of the septum also call forth symptoms of irritation in neighboring organs.

I desire to substantiate the above remarks by citing a few cases which did not yield to the ordinary treatment directed to the eyes, but improved immediately after eradicating the abnormal conditions in the nose.

Case 1.—Eugene F., aged 10, consulted me May 1 for an epiphora of both eyes. His mother stated that the boy's eyes were constantly "weeping" when out of doors. The slightest exposure to the wind, dust or heat would provoke a flow of tears down his cheeks, which were quite eroded from the action of the saline fluid. The eyes were bathed in tears, the conjunctiva palpabrarum thickened and congested. Both eyes were emmetropic. To determine the presence or absence of a stricture in the tear passages, I passed the nozzle of an Anel's syringe into the lower caniliculi, and was able to force the water through the nose in a stream. This indicated a perviousness of the ducts. An examination of the nose revealed an extensive swelling of the anterior portion of both inferior turbinated bones. Whenever I touched these parts with a probe, profuse lachrymation immediately set in. Light thrown into the eyes by means of an ophthalmoscope produced violent sneezing. These experiments convinced me of the reflex nature of the epiphora and conjunctivitis. In order to verify the correctness of my diagnosis I instructed the parent to apply a cocaine ointment several times to the Hack's swelling. The effect was most satisfactory. The overflow of tears ceased almost entirely. I made

[1] Dr. Gruening, of New York, was perhaps the first oculist to call attention to Hack's investigations in this country.

deep incisions into the swelling with a knife electrode, and also employed the flat burner. The slough was completely thrown off after ten to fourteen days. The boy was perfectly cured at the end of a month's treatment. I have seen him since and found no change in his condition. The eyes received no treatment.

Case 2.—Mr. J. K., aged 23, has been troubled for five years by the constant presence of "water in his eyes." It is especially annoying during the winter and on windy days and is always aggravated by sudden changes of temperature. The tear passages were pervious; the eyes normal. Both inferior turbinated bones were greatly swollen. Two applications of the flat electrode completely controlled the abnormal condition of nose and eyes.

Case 3.—Emma K., aged 28, also complained of epiphora, but of the left eye only. Eyes and tear ducts normal. The mucous membrane of the left nostril was highly congested and sensitive. She stated that owing to the pain experienced when breathing on a cold or windy day she constantly kept her muff or handkerchief to the left nostril. The right nostril was apparently normal. I recommended an alkaline solution with which to spray the nose. This relieved the difficulty in a comparatively short time.

Case 4.—Another anomalous condition of the nose, which may provoke secondary changes in the eyes, is the presence of polypi. Such a state of affairs was found in the right nostril of Herman S., aged 26. The flow of tears prevented him from performing the duties of cabinet-maker. He constantly had a handkerchief in his hand to wipe away the tears. He also complained of pain in the eyes and shunned strong light. His physician ascribed these symptoms to a cold, and prescribed two solutions, one to be instilled into the eyes, the other to be sniffed up the nose. The polypi were attached to the middle turbinated bone. I removed them with a Jarvis' snare and succeeded in effecting a cure.

Case 5.—Mrs. Catherine W., aged 35, applied for treatment on August 23, for weeping of the eyes and constant pain above the eye-brows. She also stated that the lids itched and frequently became red at the edges. I found a hypermetropic astigmatism of both eyes, also a convergent strabismus of the left one. Her error of refraction was corrected, the left rectus internus tenotimized, without relieving, however the signs of irritation. I therefore surmised that the origin of the trouble was located in the nose. This supposition was found to be correct. Both inferior turbinated bones were immensely swollen. The mucous membrane along the free edges of the middle turbinated was so thickened as to perfectly obliterate the fissura olfactoria. On inquiry I ascertained that the sense of smell was completely gone. Several applications of the cautery had an excellent effect. At home she employed the douche. When last I saw her, a few weeks ago, she no longer complained of difficulty in breathing through the nose. She sleeps with her mouth closed; her sense of smell is as acute as ever, and her eyes appear and feel perfectly well.

Zuckerkandl calls attention to the obstruction of the fissura olfactoria as a possible cause of anosmia (page 62). The subjoined case demonstrates more than any other, the reflex nature of certain ocular affections, and the immediate relief obtained by the application of cocaine to the inferior turbinated bone.

Case 6.—Emma B. aged 16, was led into my office by her mother. She kept both eyes closed, an attempt to separate the lids being followed by a violent blepharospasmus. Eventually I succeeded in obtaining a view of the eyes, which were bathed in tears and extremely sensitive to light. Every time the eyes were exposed to the glare of the light she sneezed violently. The only abnormal condition I could discover was a congestion of the palpebral and ocular conjunctiva. The girl said that her trouble was of two days' duration. She had several similar attacks during the winter months. I found a Hack's swelling in both nostrils. The introduction of the nasal speculum caused flow of tears and sneezing. I soaked two pledgets of cotton in a 5 per cent. solution of cocaine and placed them in the nose. I repeated this twice, allowing the cotton to remain *in situ* five minutes at a time. The effect of the drug was almost immediate. She gradually opened her eyes, and after a lapse of three-quarters of an hour was able to bear the light. I could not prevail upon her to have the parts cauterized. She now employs cocaine to abort attacks, which she has succeeded in doing on two occasions since.

The greater number of cases which have come under my observation during the last two years have been treated with the galvano-cautery. In every instance the heated platinum was employed; three or four applications were made during one sitting. Several patients gave a second and third sitting before satisfactory results were obtained. Applications of the cautery restricted to the anterior end of the inferior turbinated bone, frequently failed in procuring relief. In such cases I usually found a swelling of the posterior parts of the inferior turbinated bones also. John Mackenzie has shown that a sensitive area exists at the posterior end of the inferior turbinated bone, and Sajous has demonstrated another sensitive spot at the anterior part of the nasal cavity near the angle forming the anterior boundary of the vestibule. The erectil tissue covers the whole surface of the inferior turbinated bone, as was originally described by Kohlrausch and later on verified and more minutely described by Voltolini. This would go to prove that the swelling of the mucous membrane covering the inferior turbinated bone may occur over its entire surface, producing secondary irritation throughout the nose. The various forms of rhinitis and deviations of the septum are also amenable to treatment. The duty of a painstaking physician is to investigate the causes of diseases; oculists will do well to subject the nose to a thorough examination in seeking the source of numerous ocular complaints.

18 Central Music Hall.

MEDICAL PROGRESS.

Physiological Action of Nitrous Oxide Gas.—Dr. Dudley Buxton has communicated two valuable papers upon the above subject to the Odontological Society, based upon numerous clinical observations and experiments. The effects of nitrous oxide inhalation upon the mammalian organism are, he says broadly speaking—1, a condition of anæsthesia; 2, an emotional state, provoking a sensation of exhilaration—in fact, it plays the *rôle* of a stimulant; 3, it gives rise to modifications of the respiratory and 4, circulatory systems; and 5, provokes marked muscular movements which may be classed as (*a*) rigidity and (*b*) jactitations. The anæsthesia produced by nitrous oxide is not dependent upon analgesia or loss of sensation of painful impressions of the sensory end-organs, such as that produced by cocaine, etc., or upon failure of the conducting sensory nerves, for sensation is retained until the perceptive powers themselves cease to receive; moreover, there is immedialely anterior to the loss of consciousness a hyperæsthetic stage, therefore it may be concluded that the nerve centres are acted upon. The ways by which nitrous oxide may enter the system, and is enabled to produce its special effects are—either that it gives rise to other bodies by changes in its chemical form, or by acting as an irrespirable gas and causing asphyxia, or by exercising a specific action, just as strychnine does. Dr. Frankland came to the conclusion that nitrous oxide was not decomposed during its sojourn in the body, basing his opinion upon analyses made of the air expired by rabbits when confined in an atmosphere of mixed air and nitrous oxide. In the first stage of asphyxia, that of dyspnœa, there is an increase in the respiratory movements, both inspiratory and expiratory; in the second a dominance of the expiratory efforts, culminating in general convulsions, in the last, exhaustion, with long-drawn inspirations, gradually dying out. The blood-pressure during the first and second stages rapidly rises. Dr. Dudley Buxton has never observed an increase in the expiratory movements when HO_2 has been administered, which are merely increased in number and depth, or expiratory convulsions, notwithstanding the gas has been pushed to its utmost limit, and from a large number of sphygmographic tracings the tension in the arteries has been lower than normal. In experiments upon dogs, Dr. Buxton found that where a trephine-hole was made through the skull, during the inhalation of the gas the brain pulsations became more forcible and somewhat hurried; then the brain substance was seen to swell up, until at last it actually protruded through the aperture; whereas in a similar experiment, with the trachea occluded, the brain receded, sinking away from the opening. Other experiments showed that the heart's action was but little interfered with by nitrous oxide, even when inhalations were pushed until respiration was interrupted; during asphyxia, on the other hand, a rapid and continuous increase in blood pressure invariably occurred. The dose of nitrous oxide required to produce insensibility varies very considerably in different persons—a fact which supports the view that nitrous oxide exerts a specific action on the nerve centres. Dr. Buxton also discusses many other interesting points in the action of the gas, such as the occurrence of hallucinations.—*Lancet*, April 9, 1887.

A New Substance in the Urine.—Dr. Leo's researches on sugar in urine are not less interesting, and tend to correct the commonly accepted views on the subject. Professor Scheibler, a chemist well known for his researches on sugar, has observed that the determination of the quantity of that substance contained in a liquid gives different results, according as it is done by Trommer's method or with the polariscope. As sugar now-a-days is exclusively dealt with according to the degree of polarisation, this fact is of enormous value in trade. Scheibler has isolated a substance which is more powerful in that respect than grape-sugar. Dr. Leo's researches yield analogous results, though in a different field. He has examined a great quantity of diabetic urine after three different methods, namely, Trommer's (alkaline solution of copper); by fermentation; and with the polarisation apparatus. In many cases the results agreed, while in others there was a considerable difference. He succeeded in isolating a substance corresponding in its chemical composition to grape-sugar, and also a carbo-hydrate differing considerably from grape-sugar, and turning the plane of polarisation to the left. The power of reduction of this newly-discovered substance is to that of grape-sugar as 1 :2.48. Dr. Leo found this substance in three specimens, of diabetic urine, but it was absent in normal urine, although a great amount was examined for that purpose. From this, it may be concluded that the substance does not originate outside the organism, and that it is a pathological product. The theory of Dr. Jaques Meyer, of Carlsbad, that it may be connected with obesity is negatived by the fact that, of the three persons in whom this substance was found, only one was corpulent.—*British Medical Journal*, Jan. 8, 1887.

The Treatment of Acne.—Lassar recommends the following paste for all forms of acne:

B-naphthol	10 parts.
Precipitated sulphur	50 "
Vasoline or lanolin	25 "
Green soap	āā 25 "

This is to be spread upon the skin to the thickness of the back of a knife-blade, and left on for fifteen or twenty minutes, when it will cause a little burning. It is then to be wiped off with a soft cloth, and the skin powdered with talc. The skin soon becomes inflamed, then turns brown, and finally peels off. The desquamation can be hastened by the application of Lassar's paste with 2 per cent. of salicylic acid. When the desquamation has ceased, the acne will be found to be greatly benefited.—*Therap. Monatshaft.*, 1887, No. 1.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

The Editor of this Journal would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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HIGH PULSE-TENSION.

With our increase in knowledge and means of clinical research has been developed a disposition to undervalue the methods and ideas of our forefathers. With the multiplication of instruments for diagnosis, much of the oldtime dependence upon the eye and finger has been lost. This is particularly true with regard to the pulse. Hence it is with satisfaction that we direct attention to the Croonian Lectures delivered last month in London, before the Royal College of Physicians, by Dr. William H. Broadbent, upon "The Pulse." The speaker excused himself for venturing to consider so old a subject on the ground that there has been a great "awakening of interest" in this direction, and that, although much has been learned, there is still a great deal to be acquired. The lectures may be found entire in the *British Medical Journal*, of March 26, April 2 and 9, 1887, and the *Lancet* of the same dates. They are too long for even a cursory review within the limits allotted to this article. Hence, among the many interesting points considered, we shall direct attention to only that of high tension of the pulse.

By tension is meant the degree of intra-vascular blood pressure; "distension might perhaps be more expressive than tension, if less exact and technical." It is shown by fulness of the artery between beats, the vessel lying like a cord under the finger. The pulse is compressed with difficulty, is slow in ascent, long in duration and gradual in its decline, these characteristics being more marked, the larger the vessel. High arterial tension is chiefly due to peripheral resistance, *i. e.*, hinderance to the outflow from the capillaries into the veins. At the same time the heart's action must be vigorous. The causes of increased tension are, according to Broadbent: 1. Hereditary, as shown by the facts that paralysis and heart disease are often found in members of the same family, although of different habits of life, and that functional derangements, due to high pulse-tension, are seen in childhood and throughout life in many families. 2. Kidney disease of all kinds, except such as is attended with suppuration; being most pronounced in contracted kidney. 3. Gout and allied conditions, including almost the entire range of affections attributed by Murchison to functional derangements of the liver. 4. Lead-poisoning, with or without renal disease or gout. 5. Anæmia. This is not fully understood, nor, as Broadbent says, is it invariably the case. 6. Pregnancy. 7. Constipation. 8. Plethora. 9. Chronic bronchitis and emphysema.

The effect upon the heart of a gradual increase of arterial tension is to produce hypertrophy of the left ventricle, so commonly seen in renal cirrhosis. When, however, high tension is suddenly brought about, the heart is liable to dilatation. This explains the danger, which threatens individuals past middle age, particularly in violent or too prolonged exertion, the more if they are the subjects of gout or renal mischief.

As to whether high tension always calls for treatment, Broadbent thinks not, unless it threaten the structural integrity of the heart or brain, in which case it should be lessened. If apoplexy be imminent, blood-letting should be resorted to, and would save life in hundreds of cases in which it is now sacrificed to popular prejudice against venesection. In other instances tension may be relieved by the administration of appropriate drugs, such as the nitrite compounds and the potassium and lithia salts which latter, by promoting metabolism and diuresis, occasion the elimination of those waste products, whose presence in the blood possibly tends to keep up tension by irritating the arterioles and capillaries into contraction.

There is another condition of the circulatory apparatus in which the arteries are contracted upon their contents, while the blood-pressure is in reality low, owing to feebleness of the heart's action. This Broadbent would designate as "virtual tension," and is the characteristic pulse of cardiac dilatation. "Now, as the artery allows itself to be flattened, the pulse wave which lifts it into the cylindrical form appears to be sudden, and the pressure after lasting a certain time, seems to drop suddenly. The artery may be small or large, and the pulse varies accordingly.

We meet with the conditions which give rise to virtual tension at the two extremes of kidney disease. At the outset of acute renal dropsy, while there is obstruction in the arterioles and capillaries, the heart is rendered weak by the pyrexia and low diet, and there is more or less tendency to it throughout the attack. Again, as the heart becomes worn out in the course of chronic granular disease of the kidney, it ceases to be capable of maintaining the high tension which is characteristic of this disease, and virtual tension takes its place." In certain cases of renal disease the pulse is of low rather than high tension. This, according to the speaker, is due to absence of peripheral resistance instead of cardiac failure, and is a bad prognostic sign. It is most often encountered in connection with the large white kidney. The pulse is weak, soft, of low tension, and there is albuminuria.

Low pulse-tension often appears to be physiological and to run in families, as does its opposite. Broadbent thinks that persons with a pulse of low tension tend to accumulate fat, wear out less rapidly, but resist acute disease more feebly, than do individuals with high blood-pressure.

There are many other points in these Croonian Lectures, of which it is to be regretted space does not permit the consideration. A perusal of the lectures in full would repay the busy practitioner, since they not only contain much valuable information, but also abound in practical suggestions. They show Dr. Broadbent to be a man of intelligent observation, who has profited by his wide clinical experience.

WHAT IS THE SAFEST ANÆSTHETIC?

A discussion on the question of the selection of ether or chloroform as an anæsthetic recently took place before the New York Academy of Medicine, which may be taken as giving a fair expression of the opinion of some of the most experienced men in the country in regard to the relative advantages of these two agents. It is perhaps unfortunate that the discussion did not include other anæsthetics, such as bichloride of methyl and the A. C. E. mixture, the latter of which especially is much used at present, though not to an extent to be compared with the use of ether or chloroform.

It is noticeable that the only advocate of chloroform as the preferable anæsthetic as a rule was Dr. Sayre, who has held this view for many years, because the agent is agreeable to take, speedy in action, excites no spasmodic rigidity, and is not followed by the bad effects sometimes seen from ether. His method of giving it is peculiar, as compared with the usual methods. He uses a modification of Lente's inhaler, which by a rubber attachment can be made to fit any face perfectly: thus the patient is not allowed to breathe any air not charged with chloroform. Ten, twenty, or thirty drops of chloroform, he says, will almost always produce anæsthesia in this way; and if from any cause the heart should show signs of weakness the resort to artificial respiration will quickly cause the patient to expire the entire amount of chloroform. Given with a cone a much larger quantity of chloroform is taken into the system than is absolutely required, and when trouble arises a fatal result is more likely to ensue. But are not the large majority of Dr. Sayre's cases young children?

The views expressed by Dr. Knapp are certainly worthy of more than ordinary attention, as from 1860 to 1874 he used chloroform in more than 3,000 cases; and while he had no fatal results he had a number of critical cases. Since 1874 he has used ether exclusively, and has had no ground for complaint, and has found no contraindication for the administration of ether. He gives it by the "choking plan," though at the beginning the patient is allowed sufficient air to prevent the sensation of strangulation so often complained of. He has had no fatal cases, and has not found that the secondary effects are more unpleasant than those of chloroform. But there is one point to be considered in his experience: in several hundred of his cases the average duration of anæsthetization was one minute thirty-seven seconds; and we cannot draw absolute conclusions from an experience in these cases as to what will take place when the anæsthetic is given for long surgical operations. With anæsthetization of one or two minutes there cannot be the same risk to subsequent lung and kidney trouble as when ether is used for half an hour or an hour. And while anæsthesia of two minutes' duration in a case of renal trouble might not be followed by bad effects, it probably would if the agent were used for half an hour.

Dr. Gerster takes a more middle ground regarding these two agents than do most surgeons. While granting that chloroform is by far the more powerful agent, he does not join in the wide condemnation of it; he would have it used more cautiously. And while it is more dangerous at the time of operation, its use is not followed by the secondary affections of the lungs and kidneys seen after the use of ether. He thinks ether contraindicated: 1. When acute or chronic nephritis is present, or is supposed to exist. 2. When there is any chronic pulmonary affection,

especially in the aged, the very young, and feeble persons generally. 3. When it will not produce the complete anæsthesia and relaxation indispensable for the performance of many operations. The presence of a fatty or weak heart of course contraindicates chloroform, as does fright, probably, while it lasts. But valvular lesion is not a contraindication if there be satisfactory compensation by muscular hypertrophy, as shown by the regularity and character of the pulse. In anæmia, as a rule, chloroform is not so safe as ether, nor is it safe in marked nervous depression. But Drs. Weir, Wyeth and Thallon do not admit that nephritis is a positive contraindication to the use of ether. In regard to the pulmonary troubles sometimes seen after the use of ether, Drs. Weir and Abbe point out that these may be avoided by having the patient less exposed during the operation, keeping hot towels about him, and using greater care in transferring him from the operating room. As for the collection of mucus in the air-passages during the administration of ether, Dr. Amidon showed two years ago that it may be avoided by giving atropia hypodermatically before the operation.

It may be said that Dr. Wyeth formulated most clearly the cases in which chloroform is justifiable: 1. In children under six years of age, in whom it is less likely to cause an accumulation of mucus in the trachea and bronchi than ether; and for this class of cases it is preferable because it is more rapid and less irritating in action than ether. 2. In women in childbirth, where the recumbent position is imperative (and we may add, because it acts better than ether). 3. In an emergency when ether cannot be obtained. 4. In a patient who has previously taken ether badly. 5. In an emergency when it is necessary to perform an operation within two or three hours after the ingestion of solid food. 6. In exceptional cases of laryngeal or tracheal stenosis.

It must be said that much of the trouble from anæsthetics is due to careless or faulty administration. There is a wide-spread impression that anyone can give the anæsthetic; and there are many surgeons who still adhere to the towel-cone, giving unknown quantities of ether or chloroform, though it has been repeatedly shown that inhalers should be used. Many surgeons give morphine or atropia, or both, before beginning the anæsthetic; this is a wise precaution, but does not justify carelessness in giving the anæsthetic. Dr. Thallon uses the ordinary inhaler employed by dentists for nitrous oxide gas when giving ether, and with it he has kept up anæsthesia for hours without using more than a quarter of a pound of ether. All anæsthetics are dangerous, and become more so when administered in unknown quantities and in an unsafe manner

ABORTIVE MEDICATION.

In his *Thèse d'Agrégation* for the Assistant Professorship of Medicine, Dr. De Beurmann recently took for his subject "De la Médication Abortive" (Abortive Medication). The question has often been put, What is abortive Medication? To this the author replies that it is that which is intended to interrupt the course of a malady in its natural evolution. Strictly speaking, abortive medication ought to arrest a malady in its earliest stages, to cure it in an extremely short time, and produce the *restitutio ad integrum* of the organs affected by the morbid process; in other words, to cure in a sure and rapid manner, to diminish notably the length of the duration of the malady, or, as the author expresses it, to jugulate, should be the end of drugs and abortive means. In the present state of science, abortive medication is not yet established, nor yet is the direction in which it should be employed clearly indicated. Medical antisepsis will no doubt become in the future one of the procedures to which one will have the most frequent recourse, and the antiseptics will be placed in the front rank of abortive medicaments. De Beurmann refers to some of the diseases to which the so-called abortive treatment has been applied, the effects of which have till now been more or less satisfactory. For example, numerous drugs have been employed against blenorrhagia, as nitrate of silver, corrosive sublimate, carbolic acid, solutions of the salts of quinine, permanganate of potash, etc. The results obtained have been somewhat encouraging, but the medication may be considered inefficacious, as it is difficult to reach the micro-organisms which have penetrated to the interior of the mucous glands of the urethra. Abortive medication has rendered useful service in the treatment of furuncles, carbuncle, diffuse phlegmon, bubo, etc. Surgeons have aborted boils by a strong application of the tincture of iodine, by injections of carbolic acid; another pretends to have obtained the same result more quickly by making a deep incision at the very beginning of the malady, but this is followed by a prolonged application of spirits of camphor, which is known to possess antiseptic properties, and which should be taken into account in the result of the medication. Some surgeons employ multiple punctures at the commencement of diffuse phlegmon, but M. Le Dentu prefers large incisions which, if employed at the outset of the exudative period, will, according to this surgeon, be capable of arresting the progress of the inflammation, and even of completely preventing suppuration. It is known that the

evolution of charbon is marked by two stages: in the first the infection is local, in the second it is generalized and irremediable. It is sufficient to intervene before the second stage to make the malady abort. This may be done by the eradication of the malignant pustule, followed by deep cauterization and by iodine injections into the periphery of the œdematous zone.

By analogy, the same happy results were hoped for in syphilis, tuberculosis, and other affections. But the utility of the extirpation of the chancre is strongly combated, by a great number of authors, and those among the most competent, absolutly deny any efficacy in the operation. The question is then suggested, whether the constitutional treatment of syphilis may be considered as an abortive medication; to this, however, De Beurmann makes no reply. Another question suggested is, whether tuberculosis is a virulent malady, comparable to syphilis, generalized immediately after inoculation? This doctrine is not without its partisans, but, as De Beurmann suggests, this is no reason why the abortive medication should be neglected in these cases, as most encouraging results have been obtained by the ablation of a local tuberculous mass, anatomical tuberculosis, lupus, masses of osteitis, cold abscesses, etc. In favor of surgical interference, the author argues that certain masses of tuberculosis, local in appearance, are only manifestations of general infection, while others are truly local affections and consequently curable. In puerperal infection antiseptic injections, which have been so much vaunted in these latter times, have given the most brilliant results. Even rabies, which till now has been considered incurable, may be usefully combated by the abortive medication, now known as the method of Pasteur or the anti-rabic inoculations. Against pneumonia, typhoid fever, no abortive remedy has as yet been found efficacious, notwithstanding the daring attempts that have been made in this direction, particularly as regards pneumonia.

The antiseptic injections even in the body of a pneumonic mass are still too recent to judge of their efficacy or otherwise. Intestinal antisepsis and general antisepsis render very great service in typhoid fever, but we cannot really say that they have jugulated the malady. Fortunately the same cannot be said of the salicylate of soda in acute articular rheumatism, and of sulphate of quinine in paludal infection, which are two precious medicaments, and really abortive. It has been asked whether the medication by ether and opium in combination, recently recommended by Dr. Du Castel against small-pox is of any real use in that malady. It appears however, to have attenuated the malady, by aborting the suppurative process.

THE AMERICAN MEDICAL ASSOCIATION AND THE JOURNAL.

As we issue a large extra edition of the present number of The Journal for general circulation to members of the profession in all parts of the country, we have presented all that we could gather at this date of direct interest to members of the Association, concerning the programme of work, both in general session and in the Sections, and the reductions in railroad fares and hotel charges so far authorized. The programme is incomplete, and it is desirable that further reports of papers and contributors should be forwarded to the Chairman of the Committee of Arrangements as early as possible. The indications thus far point to a large meeting, and one of the most important that has been held in many years. The promised liberal reduction in railroad and hotel charges, and the central position of the place of meeting and its easy access from all directions, are favorable for a large gathering of representatives from every section of our country. And they will certainly receive a cordial welcome from the profession and citizens of Chicago.

The Editor of The Journal and his assistants will be no less happy to welcome the members of the Association to the publication office, where they can more readily realize the progress made during the little less than four years since the first number of The Journal of the American Medical Association was issued. At that date, 1883, and for the preceding five years, the average annual receipts of the Treasurer indicated less than 1,000 members regularly paying the annual membership dues, while since that period the number has increased more than threefold, and with the receipts from subscribers and advertisers, has so increased the income that, instead of $5,000 as in 1883, it will reach not less than $20,000, as will be shown in the forthcoming report of the Treasurer for the current year. And instead of indebtedness, as many feared, they can see a productive surplus of printing material in active use exceeding in cash value $1,058—constituting the nucleus of a printing and publication establishment which, at the end of another decade of judicious business management, will equal a working capital of $10,000, and then doing the work of a weekly journal of nearly double the number of pages of reading-matter printed at present. The present status will justify

the addition of four more pages of reading-matter at the commencement of the next volume. But it should not be forgotten that all true progress must be in the line of natural growth or well-proportioned development.

Illinois State Medical Society.—The annual meeting of this important State organization is to commence in this city on Tuesday, May 17. It is highly important that there should be a full attendance from all parts of the State. Neither the local Committee of Arrangements nor the profession throughout the State should allow the fact that the American Medical Association is to have its annual meeting in the same city only three weeks later, to lessen their interest in, and attention to the professional organization of their own State. The legitimate basis of all efficient general organization of the profession consists of the local City, County and District Societies embracing the general practitioner and specialist alike. Representatives from these make the State Societies; and on the efficiency of the several State organizations will always depend the character, scientific value, and permanency of the National Association.

Swiss Delegates to the Congress.—We learn with pleasure that the Swiss Confederation have appointed Professor Theodor Rocher, of Berne, Switzerland, and Dr. Henry A. Banga, resident in Chicago, U. S. A., as delegates to the International Medical Congress, to be held in Washington, Sept. 5, 1887.

The West Virginia State Medical Society, will hold its twentieth annual session at White Sulphur Springs, W. Va., July 13, 14 and 15, 1887. The Secretary is J. L. Fullerton, M.D., of Charleston, W. Va.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, March 21, 1887.

The President, E. J. Doering, M.D., in the Chair.

(Concluded from page 470.)

Dr. William T. Belfield read a paper on

DIGITAL EXPLORATION OF THE KIDNEY, WITH REPORT OF THREE CASES.

Of some 250 cases of nephrectomy heretofore reported, about 44 per cent. have died from the effects of the operation. The chief causes of death have been:

1. Shock (42 per cent. of the fatal cases).
2. Uræmia (14 per cent.).
3. Peritonitis (21 per cent.).

These three factors were thus responsible for 77 per cent. of all deaths. Improvement in the results of renal surgery seems, therefore, to require means for the avoidance of these three great dangers.

The chances of fatal shock are decreased by early operation, before the patient is exhausted and the damage to kidney tissue extensive through long illness. This self-evident proposition is illustrated by the fact that, while about 18 per cent. of all (250) nephrectomies have died of shock, yet of 24 nephrectomies of fairly healthy kidneys removed for wounds of loin, ureter, for mobility, etc., not a single death occurred from shock.

The greatest obstacle to the early surgical treatment of renal diseases has been *faulty diagnosis*. Such cases are usually treated as lumbago, sciatica, hip-joint disease, and (especially) cystitis, for a long time before the true seat of the lesion is detected or even suspected. Since it is not always remembered that pyelitis produces symptoms identical with those commonly ascribed to cystitis, the former is not suspected, and a diagnosis of cystitis is made; and as cystitis is still too generally regarded as an entity, a disease instead of a mere symptom requiring explanation—the patient is treated for "chronic cystitis." Finally, months or years later, a lumbar swelling or other symptom reveals the renal origin of the difficulty. Meanwhile the patient has become so enfeebled that he succumbs to the shock of an operation that could have been safely borne at an earlier period. Early exploration of the kidney—a comparatively slight operation—has, by drainage of the pelvis, in many cases relieved a difficulty which at a later stage would have required nephrectomy, a formidable operation; moreover, a preliminary drainage has been shown to be a valuable factor in diminishing mortality from nephrectomy. Thus, of seventy-three nephrectomies for suppurative lesions collected by Gross, twelve were made after previous exploration of the kidney, with but one death; of the remaining sixty-one—without previous nephrotomy—thirty-one died.

Uræmia rarely occurs after any renal operation provided the second kidney be present and in healthy condition. While commonly associated with nephrectomy, one of the annexed cases shows that uræmia may be inevitable after simple nephrotomy; hence a necessary preliminary to any renal operation should be an attempt to ascertain the functional condition of the opposite kidney. In the female this can often be accomplished by cauterizing the ureter, after Pawlik's method; in the male probably the best, though still an uncertain, means is Silbermann's instrument for compressing one urereter. (Instrument shown.) The statement that the abdominal incision, by permitting digital examination of the opposite kidney, obviates the dangers of uræmia, is fallacious; for in many cases kidneys which are indistinguishable by the finger, or even by the eye, from normal organs

are extensively invaded by disease—inflammatory, tuberculous or calculous. The pair of kidneys exhibited by Dr. Steele this evening are signal examples—normal in size, contour and consistence, yet each extensively tuberculous. Palpation through an abdominal incision could have detected nothing abnormal in either of these kidneys.

The following cases illustrate several of the principles above enunciated:

S. M., widow, 26 years old, delicate since childhood; has had dyspepsia for years; for a year past has suffered from headache, pain in back and left thigh; menstrual intervals shortened to two or three weeks. Was variously treated for lumbago, sciatica, and ovarian disease. In March, 1886, urination was unduly frequent and sometimes painful; urine contained pus and blood; was treated for cystitis.

On admission is emaciated and feeble; urination every half-hour or oftener, painful; has frequent pain in lumbar region, often shooting down to left thigh; requires morphine constantly. Urine acid, depositing blood, pus, and occasional rosettes of large uric acid crystals.

Diagnosis, calculous pyelitis, probably limited to left side; right ureter catheterized and urine appeared normal.

November 29, 1886, kidney was exposed and pelvis explored; mucous membrane rough and ulcerated, clots of pus evacuated; wound in kidney packed with gauze.

Except for persistent vomiting for a few day, recovery was without notable incident. The renal fistula was closed on the twenty-first day; patient has since been free from all her former symptoms and is regaining flesh and strength.

G. F., 30 years old, was knocked down by a cable car November 28, receiving a lacerated wound of right hand and various contusions. The hand was dressed, and patient presented no notable symptoms until December 11, when often straining at stool he passed a large quantity of blood with the urine and had severe pain and tenderness over the right kidney, with some temperature; these symptoms persisted in spite of rest, ergot, gallic acid and opium; the right loin while not swollen, felt boggy. December 22, the patient having experienced several irregular chills and sweats during the previous day, a lumbar incision was made down to the right kidney. The peri-renal tissues were found closely adherent, extravasated blood was seen under the capsule and a rent one and a quarter inches long was found in the posterior surface of the kidney extending into the pelvis; about half an ounce of a watery fluid lay behind the kidney. A large drainage tube was inserted. The temperature remained high for several days, after which recovery rapidly ensued, and January 14 the patient was discharged well; the wound entirely healed.

C. L., 48 years old, farmer, began some two and a half years ago to suffer from slight pain and stiffness in the loins; later, pus appeared in the urine; was treated for Bright's disease. About a year ago urination became frequent and sometimes painful; was supposed to have cystitis. Has lost flesh; his rest has been much disturbed by frequent calls to urinate. Six months ago he passed two small calculi after some renal colic on left side; since that time has had slight colic on left side several times, followed by expulsion of clumps of pus but no calculi.

Diagnosis, tuberculous or calculous pyelitis, probably former, bacilli were found in one examination of pus, and the lower organs were normal.

Exploration, January 26. The kidney (left) was considerably enlarged; no calculus could be detected with finger or needle. Incision through kidney showed the pelvis considerably dilated, its orifice narrowed by a thickening of upper part of ureter; mucous membrane ulcerated in several places; the pyelitis evidently tuberculous.

Nothing of note occurred until the fifth day, when the urine became scanty and tinged with blood; soon the usual evidences of uræmia became manifest, and death ensued from this cause on the eleventh day. A partial autopsy showed that the right kidney was extensively, the left slightly tuberculous; bladder and prostate normal. Evidently the right kidney, which had never caused pain, had been first diseased; the function of the left, which had latterly been performing most of the renal excretion, had been arrested not by the slight incision, but by the congestion which followed the removal of the accustomed pressure in the dilated pelvis. Similarly uræmia has followed the sudden evacuation of a habitually distended bladder.

To summarize: 1. Surgical affections of the kidneys and its pelvis are frequently masked under symptoms of cystitis, lumbago, hip joint diseases, etc.

2. Digital exploration of the kidney and its pelvis often affords the only available means for accurate diagnosis in the early stages.

3. When made with due precautions, this operation is almost devoid of danger; while saving the kidney, it may accomplish all that a dangerous nephrectomy could offer at a later stage; and if it fails to cure, it materially increases the chances of recovery from a subsequent nephrectomy.

4. An investigation into the functional condition of the opposite kidney should precede an exploratory incision into the pelvis.

GYNÆCOLOGICAL SOCIETY OF BOSTON.

Stated Meeting, February 10, 1887.

The President, H. M. Field, M.D., in the Chair.

H. J. Harriman, M.D., Secretary.

A paper contributed by Dr. Apostoli, of Paris, entitled

"ON A NEW METHOD OF TREATMENT OF CHRONIC METRITIS, AND ESPECIALLY ENDO METRITIS, BY THE INTRA-UTERINE CHEMICAL GALVANO CAUSTIC,"

To be successful in this operation the following electrical instruments are necessary:

First.—A medical galvanometer divided for intensity into milliampères.

Second.—A permanent battery of sufficient size to last for some time and to preserve practically the same strength after several successive operations. The best battery is that of Leclanché.

Third.—An intra-uterine electrode of sufficient length to reach all parts of the uterine cavity and which is not affected by acids, as platinum. It must also be provided with a muff to protect the vagina, the best being a celluloid tube.

Fourth.—A neutral or insensible electrode, which applied to the abdomen, allows a very intense current to pass without pain, without heat and without fear of burns; the best is the one invented by Dr. Apostoli in 1882.

Fifth.—Cords supple enough not to obstruct and resisting enough not be easily broken.

The details of the operation are as follows:

1. Make a tepid and antiseptic vaginal injection, placing the patient as if for an examination by the speculum.

2. Charge the battery, arrange the galvanometer and put in proper position the clay muff.

3. Introduce into the uterine cavity slowly and progressively the electrode previously singed and disinfected.

4. Cauterize the unterine cavity thoroughly and positively in all hæmorrhagic cases and less thoroughly in other cases.

Never surprise the uterus or make a too painful application, for it should be remembered that there are irritable uteri which can receive treatment only in a very mild form. After two or three applications the intensity must be increased, reaching in most cases 100 to 150 milliampères and in some cases to 200 milliampères. The intensity must at first be proportioned and regulated according to the patient's power of endurance; afterward according to the extent and gravity of the lesion and the time it has existed. The duration of the application should vary from five to ten minutes. Applications should be made every week and every second day if required. A rest of several hours should be required of all patients who have been operated upon. This rest is necessary for the safety as well as for the efficacy of the method. Vaginal antiseptic injections night and morning should be ordered. This simple and harmless treatment is only a galvano-chemical scraping, acid or basic, according to cases. It induces a formation of new mucous membrane and forms a kind of intra-uterine exudation, the action of which can be varied at will. Its beneficial effects, which Dr. Apostoli has verified in a great number of instances, does not fail to make itself felt from the first, increasing rapidly and soon restoring the patient to health. It does not condemn the woman to a forced repose and calls for no additional treatment.

Dr. E. W. Cushing did not see any advantage in the method described by the paper over the usual practice of giving ether and curetting the interior of the uterus under antiseptic precautions. He certainly regarded the latter as the shorter and safer method, inasmuch as he understood that Dr. Apostoli's procedure required, in some cases, as many as 90 or 100 applications. He did not understand from the paper whether the desired effect was produced by simple electrolysis or by galvanic cautery; if by electrolysis it was nothing new, as Dr. Cutter has used it in a similar way; if by cauterizing, its extent and depth of destructive action could not be accurately controlled, and thus its action was uncertain.

Dr. L. F. Warner understood from the paper that the action was simply an electrolytic one. He thought that it would be a dangerous method of procedure in the hands of the inexperienced or careless as the degree of effect could not be accurately known. The effect of the application might go so deep as to injure the deeper tissues of the uterus and thus set up an inflammation, or it might not reach deeply enough to remove all the diseased tissue. Unless it has the same effect as curetting it will fail to accomplish its purpose.

OVARIAN TUMOR ATTACHED TO VERTEBRA-BIFID UTERUS.

Dr. E. C. Keller presented a tumor with the following history: Patient 19 years old. Was sent to New England Hospital two months ago and was supposed to be pregnant. She stoutly denied the possibility of such a condition. Upon examination fluid was found in the abdominal cavity and external ballottement gave evidence of a solid tumor. The ascites increased to such an extent as to make relief of some kind necessary. The trocar was introduced twice but no fluid was withdrawn. Subsequent developments showed that the trocar struck the solid tumor both times, and thus prevented the exit of the fluid. The abdomen was then aspirated and four quarts of fluid removed; the remainder of the fluid leaking out after the aspiration. Peritonitis followed the tapping and the radical operation was postponed three weeks. Upon opening the abdomen a solid tumor was found attached to the fourth lumbar vertebra. This tumor had arisen from the left ovary but was attached to the right side. The uterus was bifid. The patient had never menstruated, but last May had molimen. Good recovery.

FOREIGN CORRESPONDENCE

LETTER FROM GLASGOW.[1]

The University — The Hunter Collection in the Museum—Surgery in Glasgow—MacEwen's Osteotomies — Operation for Cerebral Abscess — Radical Operation for Hernia — Cerebral Cyst—Treatment of Fractures—Subcutaneous Osteotomy versus Abdominal Section in Obstetrics.

A walk with Prof. George Buchanan through the various departments of the University of Glasgow soon convinced me that Glasgow may well be proud of her school as every branch has been supplied with every conceivable facility for teaching, regardless of expense. The buildings are located upon a hill in the western part of the city, and are surrounded by a beautiful park. We met Sir William Thompson,

[1] By permission of Drs. Fenger and Senn.

one of the most famous of scientists, in his laboratory busily engaged in his scientific investigations. The weight of advancing years appears to have no effect in diminishing his working power.

Mr. Young, the Curator of the Museum, a most accomplished scholar, very kindly showed me the most interesting specimen in William Hunter's collection. I had here an opportunity of examining the specimens and casts which had been used in illustrating the classical work of Hunter "on the Gravid Uterus." For any one who has had an opportunity to examine the wonderful book it is a great source of satisfaction to study the original specimens from which the illustrations were made. In these days of unsuccessful cholecystotomy it is interesting to look at a specimen of 1,070 gallstones, varying in size from a filbert to a millet seed, taken after death from the same patient. In the collection of urinary calculi I examined with much interest a stone corresponding in shape to the interior of the bladder, and which, as the label stated, weighed 1 pound 2¾ ounces. A number of specimens illustrate the etiological relation between renal calculi and hydro- and pyonephrosis. A number of specimens showed impaction of the renal calculus in the pelvic extremity of the ureter with extensive localized cystic dilatation of the pelvis of the kidney and its calyers. In one case the stone had become arrested near the vesical extremity of the ureter followed by immense dilatation of the tube above the point of obstruction and dilatation of the pelvis of the kidney. The anatomy of the male and female organs of generation is illustrated by numerous careful dissections, some of them have been treated with mercurial injections, which even at this time present the vascular network in a perfect manner.

In the surgical wards the antiseptic treatment of wounds is not thoroughly practiced. I was shown two cases of operation for hæmorrhoids done according to the plan devised by Dr. Lange, of New York. Excision of a circular strip of the ano-rectal mucous membrane with the eclatic veins and suturing of the wound. In one case the operation was attended by serious hæmorrhage, while in the other it was nearly bloodless. Both patients were doing well.

I called on Dr. Wm. MacEwen, whose name has become familiar wherever orthopœdic surgery is practised. He informed me that he had performed his operation of subcutaneous osteotomy with the chisel 900 times for genu valgum and varum and curvature of the leg, and out of this number of cases he never observed a bad result. He is very particular that the line of section in cases of genu valgum and varum should be made above the epiphyseal line by selecting as the fixed landmark a finger's breadth above the external condyle of the femur. The small incision for the chisel is made at a point diametrically opposite and in part of tendon of the adductor magnus, so as to avoid the anastomotica magna artery. In none of his cases had he found it necessary to resort to measures of any kind to arrest hæmorrhage. In the hands of other operators the popliteal artery had been injured, an occurrence which he attributes to carelessness of the chisel. In making the section of bone he directs that the chisel should be always directed away from the artery. In children suffering from rachitis the operation is postponed until the disease has subsided. The process of callus-formation proceeds in the same manner as in subcutaneous fractures. After osteotomy the deformity is at once corrected and the limb immobilized the same as after a fracture. He has divided as many as eight bones at one sitting and has never observed embolism or any other untoward symptoms. For genu valgum he usually applies a well padded splint with a foot board along the outer side of the limb, this splint is fastened upon a cross piece to prevent rotation.

He showed me a case in his private practice where he had operated for cerebral abscess about four weeks ago. The patient was a boy about 7 years of age who had suffered from purulent inflammation of the middle ear with perforation of the tympanum for some time. A number of weeks ago cerebral symptoms appeared, and the mastoid process was opened behind the ear by another surgeon without any benefit. When the boy came under the observation of Dr. MacEwen, he showed distinct signs of mental perturbation; the pulse was slow and the temperature subnormal. The only focal symptom was a slight ptosis on the affected side. From the history of the case and the complexus of cerebral symptoms it was concluded that the patient was suffering from a cerebral abscess. The head was shaved and thoroughly disinfected, and the trephine applied at a point about an inch above and an inch behind the external meatus. When the disc of bone was removed the dura mater appeared tense, but otherwise normal. No cerebral pulsations. A thoroughly disinfected needle was inserted and passed in a downward and forward direction towards the petrous portion of the temporal bone, the supposed seat of the abscess. About an inch from the surface pus was found. The abscess was incised and about an ounce of cream-colored pus escaped. For the purpose of securing more efficient drainage a very small trephine was applied over former site of operation, and an opening made in the floor of the abscess cavity. The middle ear, the primary seat of suppuration, was thoroughly scraped out with a Volkmann's spoon and thoroughly disinfected. The first trephine opening was closed with bone from the disc removed, an aperture sufficiently large being left for the drainage-tube. Another drain was introduced from below, thus securing efficient through drainage. An antiseptic occlusion dressing finished the operation. The effect of the operation was marvellous. The stupor disappeared promptly and full consciousness was restored in a few days. The discharge was slight, and at present the boy runs about and plays, nothing indicating the gravity of the former lesion. The defect in the skull has been almost completely repaired, a slight depression indicating the location of the trephine opening.

Dr. MacEwen places great stress on the importance of replacing the disc of bone *in toto* or in fragments after trephining, for the purpose of obtaining closure of the opening by bone during the reparative process. He is a firm believer that in an aseptic

wound completely detached fragments of bone not only retain their vitality, but take an important part in the process of repair. A number of cases which I saw in his wards would certainly tend to prove the importance of imitating his practice.

This operation for the radical cure of hernia by inversion of sac and closure of inguinal canal by stitching the pillars over each other has yielded the most satisfactory results in his hands. The inverted sac forms a cushion over the double layer of tendinous structures, conditions which necessarily offer a maximum resistance against the subsequent intra-abdominal pressure which, after the ordinary operations, tends so often to a recurrence of the hernia. He has performed the operation a great many times and has lost only one case from peritonitis and has never observed a return of the hernia.

I visited the Royal Infirmary with Dr. MacEwen, and saw another case of cerebral surgery. A little boy about 4 years of age who was running about the ward was pointed out as one of the most recent cases. The lad sustained an injury of the skull in the temporo-parietal region a few months before admission. Almost immediately after the injury hemiplegia was observed on the opposite side. The paralysis remained and was complete on his admission into the hospital. A few weeks ago, under strict antiseptic precautions, the disc of bone was removed over the fissure of Rolando at a point corresponding to the motor centre for the lower extremity. The dura mater was found tense and not pulsating. The dura was incised and several ounces of a clear fluid escaped. Further examination revealed a subdural cyst lined with a brownish membrane, a sharp fragment of bone from the internal table of the skull was found projecting into the brain and was removed. The interior of the cyst was scraped out with a sharp spoon and another smaller opening made in the skull and membranes at a lower point for more complete drainage. The large disc was replaced, only a small opening being left to secure drainage at this place. The case was explained by assuming that the injury produced a fracture of the skull and subdural hæmorrhage sufficient in amount to cause the primary paralysis, and that a cyst formed at the site of the blood clot which kept up the paralysis. The operation was performed about six weeks ago, and was followed immediately by disappearance of paralysis, so that at present both motion and sensation are nearly perfect. The bony wall at site of operation is perfect and only slightly depressed.

Another case of injury to the skull was shown which illustrates in the same striking manner the prompt effect of surgical treatment. A young man in perfect health received an injury to his skull some two years ago. No symptoms attributable to the injury were observed until six weeks ago when patient was attacked with severe headache and epilepsy. He had a hundred or more attacks daily, but never completely lost consciousness. The muscular spasms were limited to the side opposite where the skull was injured. At the point of injury a slight depression could be felt. At this point a disc of bone was removed with the trephine, which directly exposed the brain, showing that the meninges were ruptured at the time the injury occurred. Where the brain was exposed a limited circumscribed area of inflammation and softening was found, but no indications of suppuration. The diseased tissue was removed with a sharp spoon, and although the patient at this time appeared to be thoroughly under the influence of chloroform, he had a violent convulsive attack. The cavity created by the spooning was drained through a defect of the bone disc and the usual antiseptic dressing applied. Since the operation the patient has been free from pain and convulsions, and as the wound is nearly healed we can safely assume that the recovery will be complete.

The three cases related above show conclusively to what extent cerebral surgery can be practiced with success in cases which heretofore were doomed to succumb to certain death. Dr. MacEwen is taking a great interest in this modern department of surgery, and we may safely predict that a man of such ability and indomitable energy will point out new indications and methods of operation for the successful treatment of injuries and pathological conditions of the brain and its envelopes. Dr. MacEwen advocates the propriety of treating subcutaneous transverse fractures of the patella from muscular contraction, by suturing, as he claims that in all such cases bony union by any other measures is prevented by interposition of soft parts between the fractured ends, and that an apparent good result after the ordinary methods of treatment always leads to bad functional results by the gradual elongation of the cicatricial tissue between the bone ends. Fractures of the femur are treated by an outside long splint well cushioned, and short splints surrounding the thigh. After excision of the elbow joint he resorts to passive motion as soon as the wound is healed. During the day the forearm is flexed upon the arm, and supported here with an elastic band passed over the opposite shoulder, which tends gradually to increase the flexion, while at night the arm is straightened by weight and pulley extension.

He makes a very important suggestion to obstetricians by advocating the substitution of subcutaneous osteotomy for the more grave operation of abdominal section in cases of greatly contracted pelves. He claims that his experiments have demonstrated that section of the pubic bone an inch and a half or two inches from the symphysis pubis and section of the ascending rami of the ischium, would add one and one-half inches to the antero-posterior diameter of the pelvis, and that in case more room is required the ilium could be divided on each side. It would seem that this suggestion should be seriously considered by obstetricians, and as Dr. MacEwen is ready to do this operation the first opportunity that presents itself, it is to be hoped that the profession of Glasgow will call upon the master of subcutaneous osteotomy in the first case where such a procedure is indicated, so that he may demonstrate the feasibility and advisability of substituting a simple and safe operation for cases which have been until now subjected to abdominal section, which, so far, has been attended by a fearful mortality. N. Senn.

DOMESTIC CORRESPONDENCE

GALVANIC MEASURE.

Dear Sir:—You have kindly opened your valued pages to me, which I deemed necessary to protect American Electro-therapy from ridicule. I have called attention to the error, and that ends the matter as far as I am concerned, but I beg again for space, not to answer the personal attack made upon me, as that is neither of interest or importance, but to add another word to the subject of galvanic measure, that your readers may understand why I have spoken so positively.

In this progressive age it may seem bold to the superficial observer to say, "that no one ever has used, or ever will use a certain remedy without danger," but the electric current is a force so well known in certain respects, and so exactly measurable, that we can draw the line with assurance; and I am no more a prophet in saying that ten ampères of current can never be used upon the living subject than were I to say that you cannot explode a dynamite cartridge upon the abdomen without serious injury to the subject. About the same effect would be produced by ten ampéres of current. Ten ampères is the current used in the large electric lamps upon our streets; for the inside store or hotel light six ampères are generally employed. If an unfortunate fireman comes in contact with such a current for a moment, in cutting the wire, he is struck dead! The fatal shock is caused by about one-tenth of an ampère, by 100 milliampères, through the high resistance of the human body. The current used for the Brush electric light is about ten ampères; if this is sent through the human body, which, with a dry skin, represents a resistance of 30,000 ohms roughly estimated, one-tenth of an ampère (100 milliampères), strange as it may seem, would be the actual current passing through and causing the fatal stroke!

Such is the effect of 100 milliampères through 30,000 ohms resistance; what would be the effect if ten ampères of current passed through the abdomen? Granting a deep uterus and thin abdominal walls, the tissues intervening between the electrodes offer a resistance of about sixty ohms, and ten ampères through sixty ohms of resistance represent a force equal to *six horse power*! If the resistance is greater, eighty or 100 ohms, as it is likely to be, this current would mean eight or ten horse power. What what would become of an abdomen subject to this energy for five months? Six horse power represents in electro-chemical force a cautery which would burn the tissues like hot iron whatever electrodes might be used; and it is not likely that this, or any approximate intensity ever has been or ever will be serviceable or possible in the healing art. Any scientific electrician will verify these statements.

Very truly yours,

GEO. J. ENGELMANN, M.D.

3003 Locust St., St. Louis, April 26, 1887.

INTERNATIONAL CONGRESS.

NINTH INTERNATIONAL MEDICAL CONGRESS, WASHINGTON, D. C., SEPT. 5, 1887.

COMMITTEE OF ARRANGEMENTS.

The following memorandum is published by order of the local Committee of Arrangements for the information of persons desiring to attend the Ninth Meeting of the International Medical Congress, in Washington, D. C., in 1887.

RATES OF TRANSPORTATION.

Red Star Line, $100; Antwerp to New York and return.

Inman Line, $100; Liverpool to New York and return.

Hamburg Line, $90; Hamburg to New York and return.

Royal Netherlands, $80; Amsterdam to New York and return.

North German Lloyd Line, $187.50; Bremen to New York and return.

Same rates are allowed for the families of members.

Cunard Line, 10 per cent. reduction for members of the Congress.

HOTEL RATES IN WASHINGTON.

Arlington Hotel, from $3.00 to $3.50 per day.
Riggs House, from $3.00 to $3.50 per day.
Willard's Hotel, from $3.00 to $3.50 per day.
Metropolitan Hotel, $3.00 per day.
National Hotel, $3.00 per day.

Other hotels conducted on European style will furnish rooms at $1.00 to $2.00 a day. Good Lodging-houses will also furnish rooms from $1.00 to $1.50 a day.

Proper accommodations have been secured for the meeting places of the Congress and its Sections.

Transportation within the limits of the United States has not yet been determined upon, but will soon be made public. Particulars of the plan of entertainments will be published in the official programme, and all notices will be published in THE JOURNAL in due time.

Official: A. Y. P. GARNETT, *Chairman.*
C. H. A. KLEINSCHMIDT, *Secretary.*

Since the above announcement of the Committee we are informed by Dr. J. W. H. Lovejoy, Chairman of the Sub-Committee on Transportation, that the Cunard Line of Steamships have agreed to include the *families* of members of the Congress, in the reduction of 10 per cent. from their usual rates for the round trip.

Although the regular agents of the White Star Line of Steamships from Liverpool to New York, when applied to by the proper Committee at Washington, refused to make any reduction, as has been heretofore announced, we are reliably informed by Dr. James H. Parkinson, of Sacramento, Cal., that the proprietors of that line have since advertised a reduction of 10 per cent. from the usual rates, to members of the Congress and their families on the *return* trip from New York.

ASSOCIATION ITEMS.

AMERICAN MEDICAL ASSOCIATION.

The Thirty-eighth Annual Session will be held in Chicago, Ill., commencing on Tuesday, June 7, at 11 A.M., in Central Music Hall, corner of State and Randolph streets, and will continue four days. Good rooms for the several Sections will be provided as near the hall for general meetings as possible. Registration books will be open in Central Music Hall on Monday, the day preceding the meeting, for those who wish to register early. In the general meetings of each morning, in addition to the Address of the President of the Association and the Addresses of the Chairmen of the several Sections, the following important subjects will be presented for consideration:

(a) Annual Report of the Board of Trustees for the publication of THE JOURNAL, J. M. Toner, M.D., Washington, Chairman.

(b) Report of the Special Committee on Changes in the Plan of Organization and By-Laws of the Association, N. S. Davis, M.D., Chicago, Chairman.

(c) Report of the Committee on a Monument to Benjamin Rush, A. L. Gihon, M.D., U. S. N., Chairman.

(d) Report of the Special Committee on Cremation, J. M. Keller, M.D., Hot Springs, Ark., Chairman.

(e) Report of the Standing Committee on Meteorological Conditions and their Relations to the Prevalence of Disease; also concerning the Collective Investigation of Disease in Coöperation with the Committee of the British Medical Association, N. S. Davis, M.D., Chicago, Chairman.

(f) An Amendment to Create a "Section on Dermatology and Venereal Diseases, Proposed by Albert L. Gihon, M.D., U. S. N.

The work for the several Sections is not yet completed, but as far as reported is as follows:

I. *Section of Practical Medicine, Materia Medica and Physiology.*

C. N. Cooper, Cleveland, Tenn., "Glanders in the Human Subject, with a Case."

N. S. Davis, Jr., Chicago, Ill., "Value of Antipyrin in the Treatment of Rheumatism."

G. W. McCaskey, Fort Wayne, Ind., "A New Method of Intra-Pulmonary Medication," etc.

Chairman, J. S. Lynch, M.D., Baltimore, Md.; Secretary, J. B. Marvin, M.D., Louisville, Ky.

[We have received no report from the officers of this Section.]

II. *Section of Obstetrics and Diseases of Women.*

J. E. Kelly, New York, N. Y., on "Lithiasis in Pregnancy."

Charles Meigs Wilson, Philadelphia, Pa., "The Technique of Ovariotomy."

Hiram Corson, Plymouth Meeting, Pa., "The Treatment of Abortion."

Wm. T. Taylor, Philadelphia, Pa., "Eclampsia."

W. S. Caldwell, Freeport, Ill., "Intra-Uterine Therapeutics."

George F. French, Minneapolis, Minn., "The Chief Source of Danger from the Use of the Intra-Uterine Sound."

B. E. Hadra, Austin, Texas, "Hysteria and the Ovaries."

Ely Van de Warker, Syracuse, N. Y., "Laparotomy as a Cure for Tuberculosis of the Peritoneum."

John A. Miller, San Francisco, Cal., "Erosions in Ulcerations of the Vaginal Portion and their Relation to Lacerations of the Cervix, with Practical Hints when not to Perform Emmet's Operation."

John Morris, Baltimore, Md., "Treatment of Placenta Prævia."

Wm. M. Findley, Altoona, Pa., "Ante-Partum Hæmorrhage."

Papers have also been promised, more or less definitely, by H. F. Campbell, Augusta, Ga.; L. Ch. Boislinière, St. Louis, Mo.; S. S. Todd, Kansas City, Mo.; E. H. Trenholme, Montreal, Canada; W. M. McPheeters, St. Louis, Mo.; A. McLaren, St. Paul, Minn.; John M. Keating, Philadelphia, Pa.; W. H. Wathen, Louisville, Ky.; W. H. H. Githens, Philadelphia, Pa.; Howard A. Kelly, Philadelphia, Pa.; W. P. Manton, Detroit, Mich.; and A. H. Halberstadt, Pottsville, Pa.

Chairman, F. M. Johnson, M.D., Kansas City, Mo.; Secretary, W. W. Jaggard, M.D., Chicago, Ill.

III. *Section of Surgery and Anatomy.*

H. O. Walker, Detroit, Mich., "External Perineal Urethrotomy, with Report of Eighteen Cases, Instruments, etc."

N. B. Carson, St. Louis, Mo., "Injuries of the Abdomen and their Proper Treatment."

W. C. Wile, Philadelphia, Pa., "Surgical Notes from the Case-Book of a General Practitioner."

I. D. Griffith, Kansas City, Mo. "Skin Grafting."

W. D. Kearns, Pittsburgh, Pa., "Retro-flexed Splints for Fractures of the Forearm."

E. E. Glover, Terre Haute, Ind., "Operative Treatment of Non-Malignant Stricture of the Rectum."

V. P. Gibney, New York, N. Y., "The Management of Cold Abscesses."

R. Harvey Reed, Mansfield, O., "A Case of Calculi in the Appendix Vermiformis."

A. Sidney Roberts, Philadelphia, Pa., "The Mechanical and Operative Treatment of Infantile Spinal and Cerebral Paralyses."

Papers have been promised by Wm. T. Bull, New York, N. Y.; H. Tuholsky, St. Louis, Mo.; and J. McF. Gaston, Atlanta, Ga.

Chairman, H. H. Mudd, M.D., St. Louis, Mo.; Secretary, A. M. Pollock, M.D., Pittsburgh, Pa.

IV. *Section on State Medicine.*

The following gentlemen have promised to read papers upon the subjects mentioned:

Henry B. Baker, Lansing, Mich., "Scientific Collective Investigation of Disease."

Carl H. Horsch, N. H., "The Necessity of Inspection of Food Animals."

J. W. Robertson, Cal., "The Medical Climatology and Hydrology of Northern California."

Prof. V. C. Vaughan, University of Michigan,

"The Chemistry and Physiological Action of Tyrotoxicon."

T. B. Greenley, Ky., "The Hygiene of Infancy and Childhood."

P. H. Millard, Stillwater, Minn., "The Propriety and Necessity of the Regulation of Medical Practice by the State."

H. C. Markham, Independence, Iowa, "State Regulation of Medical Practice—Its Value and Importance."

Major Morse K. Taylor, Surgeon U. S. Army, "The Influence of Military Life on the Health of the Soldier."

Woods Hutchinson, Iowa, "The Physical Basis of Brain-Work."

Walter Wyman, Surgeon U. S. Marine Hospital Service, and several others, have promised papers, but have not yet announced their titles.

The Section is also instructed to submit at the coming meeting of the Association the draft of a law regulating the conditions requisite as preliminary to the study of medicine, the requirements for graduation and for the license to practice medicine, to be urged upon the several States in order to secure uniformity in method and results throughout the United States. It is proposed to discuss this question in connection with the papers of Drs. Millard and Markham above announced. Members of the Association desiring to read papers upon any subject properly coming within the purview of the Section on State Medicine, are requested to notify the Chairman or Secretary at once.

Chairman, George H. Rohé, 611 N. Calvert St., Baltimore, Md.; Secretary, Walter Wyman, U. S. Marine Hospital Service, New York, N. Y.

V. *Section of Ophthalmology and Otology.*

C. M. Hobby, Iowa City, Iowa, "Sympathetic Ophthalmia."

J. L. Thompson, Indianapolis, Ind., "Observations on Displacement of the Crystalline Lens, from Congenital and other Causes."

J. M. Ray, Louisville, Ky., "Hydrobromate of Hyoscine as a Mydriatic."

F. C. Hotz, Chicago, Ill., "Treatment of Hypopyon Keratitis with Frequent Irrigations of Sublimate."

J. W. Heustis, Pittsburgh, Pa., "Some of the Ophthalmological Clinics of Europe."

Robert Tilley, Chicago, Ill., will exhibit "A Boy of 12 years illustrating the results of either Pemphigus or Essential Shrinking of the Conjunctiva in both Eyes."

Dudley S. Reynolds, Louisville, Ky., "Nature and Treatment of Phlyctenular Ophthalmia."

Chairman, X. C. Scott, M.D., Cleveland, Ohio.; Secretary, J. H. Thompson, M.D., Kansas City, Mo.

VI. *Section on Diseases of Children.*

I. A. Larrabee, Somerville, Ky, "Epidermic and Hypodermic Medication of Infants."

I. N. Love, St. Louis, Mo., "Scarlet Fever."

S. B. Sperry, Delafield, Wis., "Aphasia in Children."

W. S. Stuart, Philadelphia, Pa., "New Method of treating Congenital Phymosis."

H. Landis Getz, Marshalltown, Iowa, "Diphtheria."

The following have promised papers: J. M. Dunham, Columbus, Ohio; W. D. Haggard, Nashville, Tenn.; Henry Jameson, Indinapolis, Ind.; J. V. Shoemaker, Philadelphia, Pa.

Chairman, J. S. Knox, 70 Monroe St., Chicago, Ill.; Secretary, W. B. Lawrence, Batesville, Ark.

VII. *Section of Dental and Oral Surgery.*

K. B. Davis, "Pathological Conditions of the Teeth, and their Systemic Effects."

G. Frank Lydston, "The Necessity of Liberal Professional Education in the Practice of Dental and Oral Surgery."

Garrett Newkirk, "The Deciduous Teeth and their Relation to the Health of Children."

A. H. Thompson, "Pathological Heredity, and Congenital Abnormalities of the Teeth."

Arthur Freeman, "Dental Lesions causing Facial Neuralgia and other Neural Phenomena."

W. H. Atkinson, "Sponge Grafting."

Subjects not announced, Chas. Payne, A. E. Baldwin, J. Taft, W. W. Allport, John Marshall.

Chairman, J. S. Marshall, 240 Wabash Ave., Chicago; Secretary, Eugene S. Talbot, 125 State St., Chicago.

VIII. *Section of Medical Jurisprudence.*

Judge Amos G. Hull, New York, "Medical Jurisprudence in its Relations to Undue Influences as Affecting Wills and Contracts."

Joseph F. Edwards, Philadelphia, Pa., "The Suppression of the Illegal Practice of Medicine."

James G. Kiernan, Chicago, Ill., two papers, "State Supervision of the Insane," and "Medico-Legal Relations of Epilepsy."

N. S. Davis, Chicago, Ill., "The Medico-Legal Relations of Alcoholic Liquors, Fermented and Distilled."

Frank S. Billings, Lincoln, Neb., "The Necessity of a Uniform Standard of Education; especially more detailed Pathological Instruction to Unity of Professional Action in Forensic Medicine."

T. D. Crothers, Hartford, Ct., "Mental Responsibility in Inebriety."

S. V. Clevenger, Chicago, Ill., "The Medical Jurisprudence of Mental and Nervous Diseases."

E. C. Spitzka, New York, "Paralytic Conditions in Relation to Testamentary Capacity."

N. E. Brill, New York, "Report on the present state of our knowledge concerning Concussion from Railway Accidents."

Alfred F. Holt, Cambridge, Mass.; W. C. Wile, of Philadelphia, Pa.; F. E. Daniels, Austin, Texas; and Herman J. Boldt, New York, have also partially promised comments.

Chairman, I. N. Quimby, Jersey, City, N. J.; Secretary, W. W. Kimball, Minneapolis, Minn.

[The above incomplete report of work for the several Sections, includes many interesting and important subjects for discussion, and indicates a very general interest in the coming annual meeting of the Association. We shall add other names and topics each week as they may be furnished us.]

RAILWAY RATES.

The following named roads will give reduced fares to all delegates, members, and their families attending the meeting. Return tickets will be issued on the certificate plan *only*. Tickets for the return journey will be sold at ⅓ the highest regular limited fare. If there is no limited fare to a desired point, the price will be ⅓ the unlimited fare. Tickets for the return journey will be limited to continuous passage by first train after they are bought. All tickets for return journey must be accompanied by a certificate signed by the Chairman of the Committee on Transportation, or by an authorized member of the Committee, showing that the holder has attended the meeting. Tickets are good for 10 days from date of purchase.

The roads which will accept return tickets on the certificate plan are:

Baltimore & Ohio (west of the Ohio River).
Buffalo, New York and Philadelphia.
Chicago & Grand Trunk.
Cincinnati, New Orleans & Texas Pacific.
Chicago, Vincennes & Cairo Line.
Chicago & West Michigan.
Chicago, St. Louis & Pittsburgh.
Cincinnati, Hamilton & Dayton.
Cincinnati, Indianapolis, St. Louis & Chicago.
Cincinnati, Washington & Baltimore.
Cleveland, Akron & Columbus.
Cleveland & Marietta.
Cleveland & Pittsburgh.
Cleveland, Columbus, Cincinnati & Indianapolis.
Cleveland, Lorain & Wheeling.
Columbus & Cincinnati Midland.
Columbus, Hocking Valley & Toledo.
Chesapeake & Ohio.
Chicago & Atlantic.
Dayton & Ironton.
Detroit, Lansing & Northern.
Dayton & Union.
Detroit, Grand Haven & Milwaukee.
Evansville & Terre Haute.
Flint & Pere Marquette.
Fort Wayne, Cincinnati & Louisville.
Grand Rapids & Indiana.
Grand Trunk.
Indianapolis & St. Louis.
Indianapolis & Vincennes.
Indianapolis, Bloomington & Western.
Indianapolis, Decatur & Springfield.
Jeffersonville, Madison & Indianapolis.
Kanawa & Ohio.
Lake Erie & Western.
Lake Shore & Michigan Southern.
Lousiville & Nashville.
Louisville, Evansville & St. Louis.
Louisville, New Albany & Chicago.
Michigan Central.
Michigan & Ohio.
New York, Chicago & St. Louis.
New York, Pennsylvania & Ohio.
Niagara Falls Short Line.
Ohio & Mississippi.
Pennsylvania.
Peoria, Decatur & Evansville.
Pittsburgh & Lake Erie.
Pittsburgh & Western.
Pittsburgh, Cincinnati & St. Louis.
Saginaw Valley & St. Louis.
Scioto Valley.
Toledo & Ohio Central.
Toledo, Peoria & Western.
Valley Railway.
Vandalia Line.
Wabash Railway.
Wheeling & Lake Erie.
Baltimore & Ohio (east of Parkersburg, Bellaire & Wheeling.)
Baltimore & Potomac.
Bennington & Rutland.
Boston & Albany (on business between common points in New England and points west of, but not including Albany.)
Boston & Lowell.
Boston, Hoosac Tunnel & Western.
Buffalo, Rochester & Pittsburgh.
Camden & Atlantic.
Central Vermont.
Delaware & Hudson Canal Co.
Delaware, Lackawanna & Western.
Fitchburg.
Lehigh Valley.
New York Central & Hudson River.
New York, Lake Erie & Western.
New York, Ontario & Western.
Norfolk & Western.
Northern Central.
Philadelphia & Erie.
Philadelphia & Reading.
Philadelphia, Wilmington & Baltimore.
Rome, Watertown & Ogdensburg.
Shenandoah Valley.
Troy & Boston.
West Jersey.
West Shore.

The following named lines offer one and one-third fare for round trip:

Burlington, Cedar Rapids & Northern Railway.
Central Iowa Railway.
Chicago & Alton Railroad.
Chicago & Northwestern Railway.
Chicago, Burlington & Northern Railway.
Chicago, Burlington & Quincy Railroad.
Chicago, Milwaukee & St. Paul Railway.
Chicago, Rock Island & Pacific Railway.
Chicago, St. Paul, Minneapolis & Omaha Railway.
Green Bay, Winona & St. Paul Railroad.
Hannibal & St. Joseph Railroad.
Illinois Central Railroad.
Kansas City, St. Joseph & Council Bluffs Railroad.
Milwaukee & Northern Railroad.
Milwaukee, Lake Shore & Western Railway.
Minneapolis & St. Louis Railway.
Minnesota & Northwestern Railroad.
Missouri Pacific Railway.
Rock Island & Peoria Railway.
Sioux City & Pacific Railroad.
Wabash Western Railway.
Wisconsin Central Lines.

[Other roads will be added as heard from. These lists have been prepared at great expenditure of time by the Chairman of the Committee on Transportation,

DR. LISTON H. MONTGOMERY,
Briggs House, 189 Randolph St., Chicago,

who should be addressed for additional information.]

HOTEL RATES.

The following hotels in Chicago will commute their rates to delegates and members and their families attending the annual meeting in June:

Grand Pacific Hotel.—A discount of 50 cents to each person per day in all rooms, except those at $3.00 per day, on which there will be no discount. By this arrangement a $3.50 room with bath may be had for $3.00, a $4.00 room for $3.50 for each person, and so on. A club room will also be placed *free* at the disposal of the Association for headquarters, if desired.

The Sherman House will give 50 cents *per capita* off regular rates, which are $3.50 to $5.00 *per diem*, as well 50 cents *per capita* off $3.00 per day rooms where more than one person occupy a room. Such committee rooms, etc., as may be required will be placed at the disposal of the Association free of cost. No cots are ever used at this hotel, and every one will be given a good bed.

The Tremont House offers 50 cents discount from

regular rates, which are from $3.00 to $4.50 *per diem*. This rate applies to each person or delegate, both included.

The Palmer House gives a rebate of 50 cents *per capita* on the American plan, when two occupy a room. On $1.00 rooms, (European plan) a rebate of 25 cents *per capita* where two occupy a room. On rooms for which the rate is $1.50 and upwards, a rebate (on the European plan) of 50 cents *per capita* is offered.

The Briggs House.—The rates will be $2.00 to $2.50 per day for their *best* rooms, meals included, a reduction of 50 cents per day on transient rates.

McCoy's New European Hotel.—The rate will be 75 cents per day for each person when two or four occupy a room. A single room for one person is $1.00 per day, or for man and wife $1.50 per day.

Clifton House.—Transient rates are $2.50 to $3.50 per day. A reduction of 50 cents per day from the above rates is offered to delegates and their families.

Commercial Hotel.—Transient rates $2.00 to $2.50 per day. For all visitors in attendance at this meeting who stop at this hotel, a discount of 15 per cent. will be allowed on all board and room bills.

Leland Hotel offers accommodations to delegates at $3.00 and $3.50 per day, *i. e.* rooms with board.

The Richelieu, on the European plan only. The rate for single rooms, is from $2.00 to $5.00 per day; suites of rooms proportionately.

All these hotels are within five to eight minutes' walk from Central Music Hall, corner State and Randolph streets.

Charles Gilman Smith, M.D.,
Chairman Local Committee of Arrangements.
Liston H. Montgomery, M.D.,
Chairman Committee on Transportation.

Rush Monument Committee.—The Rush Monument Committee will meet at Chicago, Illinois, on June 7, proximo. The hour and place of meeting will be announced on the morning of the first day of the meeting of the American Medical Association. Chairmen of local Committees are requested to send their reports of collections to the Treasurer, *Dr. J. M. Toner, 615 Louisiana Ave., Washington, D.C.*, at their earliest opportunity. It is desirable that every State, Territory, and branch of the Government Services represented should make as favorable a showing as possible in the next report of the Committee. George H. Rohé, *Secretary.*

MISCELLANEOUS.

Windham County (Conn.) Medical Society.—At the recent regular annual meeting of this Society the following officers and delegates were elected:

President—Charles J. Fox, of Willimantic.

Vice-President—F. G. Sawtelle, of Pomfret.

Secretary and Treasurer—Charles N. Allen, of Moosup.

Censors—W. A. Lewis, of Moosup, T. M. Hills, of Willimantic, E. H. Davis, of Plainfield.

County Medical Reporter—R. Robinson, of Danielsonville.

Fellows to State Medical Society at Hartford in May—T. R. Parker, of Willimantic, Lowell Holbrook, of Thompson, R. Robinson of Danielsonville, W. A. Lewis, of Moosup, H. L. Hammond, of Dayville; alternates, F. O. Bennett, of Willimantic, E. E. Gaylord, of Woodstock, N. Hibbard, of Danielsonville, E. H. Davis, of Plainfield, E. D. Kimball, of Scotland.

Nominating Committee—L. Holbrook; alternate, W. A. Lewis.

Delegates to American Medical Association at Chicago in June—E. A. Hill, of Killingly, T. M. Hills, of Willimantic, F. G. Sawtelle, of Pomfret.

Essayist for 1888—W. W. Foster, of Putnam; alternate, O. B. Griggs, of Willimantic.

The next annual meeting will be held at the Hooker house in Willimantic.

Deputy Inspector-General Lloyd, R. N., of the office of the Director-General of the Medical Department at the Admiralty, has been appointed to represent the British Naval Service at the forthcoming International Medical Congress.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 23, 1887, TO APRIL 29, 1887.

Lt.-Col. and Asst. Surgeon J. R. Smith, detailed as member of board to meet in Washington, D. C., April 28, to prepare rules and regulations for the government of the Hospital Corps of the Army. By par. 8, S. O. 92, A. G. O., April 21, 1887.

Major and Surgeon Morse K. Taylor, relieved from duty at Ft. Sill, I. T., May 10, 1887, to proceed home, San Antonio, Texas, preparatory to retirement. Par. 20, S. O. 92, A. G. O., April 21, 1887.

Major and Surgeon Chas. M. Heizmann, detailed as member of board to meet in Washington, D. C., April 28, to prepare rules and regulations for the government of the Hospital Corps of the Army. By par. 8, S. O. 92, A. G. O., April 21, 1887.

Capt. and Asst. Surgeon Fred. C. Ainsworth, detailed as member of board to meet in Washington, D. C., April 28, to prepare rules and regulations for the government of the Hospital Corps of the Army. By par. 8, S. O. 92, A. G. O., April 21, 1887.

First Lieut. and Asst. Surgeon Julian M. Cabell (recently appointed), to proceed to Ft. Omaha, Neb., and report in person to the commanding officer of that post for temporary duty. Par. 19, S. O. 92, A. G. O., April 21, 1887.

First Lieut. Chas. E. Woodruff, Asst. Surgeon (recently appointed), ordered for duty at Ft. Wayne, Mich. S. O. 96, A. G. O., April 26, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING APRIL 30, 1887.

Atlee, E. W., Asst. Surgeon, ordered to the receiving ship "Vermont."

Biddle, Clement, P. A. Surgeon, detached from the Naval Academy, and ordered to Marine Rendezvous, Philadelphia, Pa.

Ashbridge, Richard, P. A. Surgeon, ordered to the Naval Academy.

Hudson, A., Medical Inspector, ordered to the U. S. Str. "Trenton."

Decker, J. Corbin, Asst. Surgeon, detached from the receiving ship "St. Louis," and ordered to the U. S. Str. "Trenton."

Hibbett, C. T., P. A. Surgeon, ordered to the U. S. Str. "Trenton."

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ABSTRACT OF A LECTURE

ON

ANTIPYRESIS AND ANTIPYRETIC METHODS.[1]

BY PROF. DR. H. VON ZIEMSSEN,

DIRECTOR OF THE MEDICAL CLINIC IN MUNICH.

In analyzing the views as to the value of antipyretics we may group authors as follows: 1. The extremists, who use only the cold bath, and reject internal antipyretics (Brand, Vogl, Winternitz and others). 2. Those who use luke-warm baths, but reject internal antipyretics (Naunyn and others). 3. Those who, according to indications, use strict and moderate hydrotherapy and internal antipyretics (Liebermeister, Jürgensen, Riess). 4. Those who imagine fever to be a kind of necessary and salutary regulation, arrangement or mechanism, and use antipyretic interference only on the appearance of dangerous conditions or complications (Heubner, Curschmann, and others). 5. Those who regard fever as necessary, reject antipyretics, and only use dietetic measures (Gläser). 6. The class who absolutely deny an influence of therapeutics on the mortality of typhoid (Port).

We thus see that all possible conceptions have their supporters, and all parties assert the correctness of their views on grounds that, in their opinion, will stand any test. It would be a lamentable state of affairs if in this way physicians should become sceptical; and especially if, after a period of active antipyresis with its satisfactory results, we should be drawn, by a reactionary movement, into the therapeutic indifference of the Vienna school. Against such a movement, all who understand the subject, and especially clinicians, must fight; and it is pleasing to know that at the IV Congress für innere Medicin those who expressed themselves against antipyresis were divided and made but little impression.

Has the antipyretic treatment of highly febrile infectious diseases, and especially of typhoid fever, a favorable influence on the individual case? Has it the same or a corresponding influence on the totality of cases of disease, and also on the mortality? Both questions we must answer affirmatively. Observations at the bedside prove the first, and the concordant statistics of the clinician the latter. We can affirm with certainty that the course of the individual case is more favorably and less dangerously shaped under judicious and antipyretic treatment; and, on the other hand, that the mortality of typhoid fever has fallen at least to one-half its former rate.

Against these propositions different objections have been raised. On the one hand (Fiedler), the decrease of typhoid (both as to number of cases and mortality) in the larger cities, is referred to their health regulations, and certainly with truth. Our observations in Munich have shown the influence of these regulations. Nevertheless, the relative decrease of mortality can scarcely depend on the healthfulness of the soil, but on the character of the epidemic, and doubtless also on the methods of treatment, as I will show later. On the other hand (Port), the ratio of mortality (the severity of the epidemic of typhoid) is connected with the state of the soil-water. From the statistics of the Munich garrison for the last ten years Port finds that the fluctuation of the soil-water is more an index of the severity than of the size of the epidemic. From this he draws the conclusion that antipyretic therapy is without any influence on the mortality, since the reduction of the former mortality from 20 to 2 per cent., as shown by the tables of the hospital of the Munich garrison, would be impossible without the discovery of a specific remedy. But Vogl, chief physician to the garrison hospital, has shown, by using the same material as did Port, that Port's hypothesis is untenable. We must wait for other material before further estimating Port's conclusions.

Such works as that of Vogl are of the greatest value for the further development of the antipyretic therapy of typhoid fever, because they are based on very similarly situated material—strong young men from 20 to 22 years under corresponding and almost similar external circumstances—with well disciplined attendants schooled to a certain method—a cold bath at 63.5° F. lasting a quarter of an hour (with a rectal temperature of 102.2° F.) about every three hours, winter and summer, in unheated rooms, with the windows opened day and night. The result of this experiment speaks clearly enough: the number of deaths from typhoid fever by this treatment, without the use of medicines, in the years 1875 to 1882 (inclusive), was 28 in 520 cases of the disease, while in the other divisions of the same military hospital, in which a more mild water treatment was used with internal antipyretics, there were 52 deaths in 610 cases in the same time. This is, then, a mortality of 5.4 per cent. by the exclusive Brand treatment, and

[1] Translated, by permission, from advance sheets by Wm. G. Eggleston, M.D., of Chicago.

a percentage of 8.5 by the combined method. From this we may perhaps draw the conclusion that in military hospitals under the given conditions the energetic Brand's cold water treatment is superior to the modified treatment, and that combined with antipyretics, and that, as a rule, it gives the best results in typhoid fever. This conclusion exactly corresponds to what has been the case in the Prussian army since 1865, since which time the mortality from typhoid fever has fallen from 25 to 8 per cent.; this, according to the report of the Prussian Minister of War, is due principally to Brand's cold water treatment, though partly also to improved hygienic conditions and better individualization in treatment. The present results in the Prussian army are entirely independent of local, temporary, and individual influences.

But though these results, taken with the former publications of Brand, Jürgensen, Liebermeister, and others, show that there is no doubt that Brand's method is best in military practice, the case is somewhat different in civil practice. We cannot introduce Brand's method directly into civil hospitals and private practice: there is a lack of trained attendants and that degree of discipline which forbids opposition on the part of the patient or carelessness on the part of the attendant; and again—and this is a most important point—the clinical material of the civil hospital and private practice is different and much less fit for such energetic cooling as Vogl carries out both by regulating the temperature of the barracks and the bath. Consider the circumstances of age, sex, anomalies of development, pregnancy, anomalies of constitution and nutrition, bad dwelling, inebriety, occupation, scrofula, tuberculosis, chlorosis, anæmia, cardiac affections, syphilis—these are the things with which, in addition to typhoid, we have to contend in our typhoid paitents in civil practice. The military physician should not forget them; he has a better mortality percentage because he has the flower of the youth of the whole country in his hands, with all uncertain and precarious constitutions excluded, while we have to treat the miserable people in all their unfavorable conditions.

With the strict Brand Vogl cold-water treatment we will now compare the results of a pure but somewhat modified hydrotherapy in a civil hospital. As representative of this method I place Naunyn before all others. He has not a large amount of material at his command, but it is large enough to cast into the scale. By his modified method Naunyn lost 10 of 145 cases, or 6.9 per cent.; certainly a favorable percentage. His method is as follows: When the axillary temperature (which is measured every three hours) reaches 103.1° F. the bath is given, usually eight baths in twenty-four hours, and in most cases between noon and midnight. Naunyn divides the baths according to temperature into: cold (72.5° to 81.5° F., duration five to ten minutes), luke-warm (from 81.5° to 90.5°, ten to fifteen minutes), and warm (90.5° to 95°). The warm baths are given in the later stages in very actively delirious patients with great restlessness and muscular weakness. For several years Naunyn has not given baths at a lower temperature than 72.5°. The diet consists of 1.5 litre of bouillon with an egg, rarely two eggs, 1 litre of milk, 1 roll, 1 litre of water or 1.5 litre of wine or sometimes 1.5 litre of grog (consisting of 0.5 litre of rum, 50 grm. sugar, and hot water).

We come now to those authors who use combined antipyresis, the combination of baths and internal antipyretics, according to the indications of the individual case. This group appears to embrace by far the greater number of clinicians and physicians. The statistics published by them correspond entirely, if we recognize the statement as correct that typhoid usually gives a less mortality in small than in large cities. With this method of combined antipyresis there is great play for modifications of the methods of treatment, and it is not impossible that the methods of the clinicians using this are all different. The cold, luke-warm and warm baths, the gradually cooled and the prolonged luke-warm bath, the cold douche, the moist pack, the cold fomentation, the simple sponging, and of internal remedies quinine, antipyrin, thallin, salicylic acid, kairin, hydrochinone, antifebrin—all these have their friends and supporters.

You will now ask: Which method of antipyresis shall we employ in our cases? What kind of hydrotherapy shall we use? And under what circumstances shall we use antipyretic measures? Our discussion of these points must begin with a consideration of those changes which antipyresis is intended to and can control. As the name shows, it was at first thought that the object of antipyretic treatment was the fever alone, and the factors from which the conception fever arises, principally the high temperature of the blood and tissue. This opinion, which was mainly defended by Liebermeister, arose from the idea that the high temperature of itself, especially if of long and uniform duration, was dangerous, and threatened life. There is no doubt as to the dangers of hyperpyrexia, but it seems that the high temperature has usually not the significance which Liebermeister at first attributed to it. The severe cerebral symptoms, the cardiac degeneration, renal troubles, the trophic disturbances, do not seem to be the effects of the high temperature, but co-effects of the dangerous process, the infection, causing the fever.

We may now answer the question as to what antipyresis should do, by saying that we must first widen our conception of the word; it is not merely a battle against fever-heat and its action, but also against the carriers of infection and their destructive products and actions in the organism. To take an exact position between the fever action and the microbe action is not possible at present. Naunyn has cleared up many points, but much is still dark. Naunyn concedes the acceleration of the heart's action and respiration as the influence of over heating. The troubles of the nervous system, of the blood and its vessels, of digestion, of tissue change and secretion, he places to the account of the infection. But the proofs which Naunyn gives are mostly of a negative nature, and there are still many doubts, especially as regards the nervous and circulatory troubles, as to the innocence of the fever. The cases of aseptic fever, in which there is no other trouble than high tempera-

ture, are very exceptional; and we must also regard as exceptional those cases in which, especially among the lower classes, the nervous system is but little or not at all affected by the fever, so that the patients continue to go around, and even to work for days after the beginning of the disease. Against these we may place those cases of extreme susceptibility to fever, usually occurring in persons of nervous constitution.

I mention these things in order to show that the absence of nervous symptoms in individual cases does not prove that as a rule there are no nervous troubles in fever as such, but that they depend on the infection. I have no doubt that fever itself affects the nervous system, and slightly or more severely according to the height of the temperature. On the other hand, I think that the cerebral troubles may be conditional upon the infection, as shown by the cases with severe prostration of cerebral function with comparatively low temperature, as in typhoid fever, for example, the early loss of consciousness and the active delirium in the first days of typhus fever, the severe nervous troubles in many cases of acute sepsis, in which there is no or but little fever. In the same way are the boundaries between the limits of action of the fever and the infection in the circulatory and respiratory troubles uncertain. That the acceleration of the heart's action and of respiration depends on the fever may perhaps be regarded as proved, as it is probably proportional to the relaxation of the vascular walls, which may be recognized by the constantly noticeable dilatation of the arteries and capillaries during fever, as well as by the sphymographic tracings. The relaxation of the peripheral vessels which is peculiar to fever can be attributed to nothing else than paralysis of the vasoconstrictor nerves, since, as Bäumler has shown, the reaction of the vasculars to irritation of the skin (stroke with the finger nail) is very prompt. If, then, the troubles mentioned are caused by the fever, we must, on the other hand, refer the nervous troubles, disturbances of organic tissue-change, of the quality of the blood, and of secretion, perhaps entirely or in the greater part to the infection: the paralysis of the heart, the reduction of the number of red blood corpuscles, the deficiency of alkali and carbonic acid in the blood, the generally increased excretion of urea (especially the large epicritical), the albuminuria, and the trophic disturbances of the muscles and skin.

We will now consider the antipyretic measures in connection with these disturbances; how and to what extent the former affect the latter. Hydrotherapy deserves to be considered first; according to the experience of all competent observers it has the first place, because it conbines in itself all the attributes of a remedial measure necessary in these cases, and its action on the fevered organism may be varied to any degree. But the mistake must not be made of supposing that the favorable action of the cold water treatment has been particularly proved in typhoid fever, whilst in other febrile diseases, such as pneumonia, erysipelas. and acute phthisis, it is shown to be much less applicable. In the last-named affection a favorable influencing of the general condition is not to be mistaken. The action of cold and lukewarm baths may perhaps be defined as follows: The bath acts on the fevered organism by cooling the blood at the periphery, and then by the return of the cooled blood from the skin to the interior of the body and to the internal organs. Whether this stream of cooled blood has an immediate effect on the central nervous apparatus is not certain, but I believe I may conclude from a personal experience (a severe attack of typhoid fever in 1874, during which I was bathed a great deal) that the immediate effect after the bath and the first effect of it is a sensation of drowsiness and cooling of the brain: and I must say that this is an indescribably pleasant effect. Following this directly cooling effect is the refreshing action on the central nervous system, which I regard as the most distinctive action of the cold bath. The excitation experienced by the sensitive nerves from the low temperature of the bath is at once transmitted centripetally, and acts to a greater or less degree on the important nervous centres. The lowered excitability of the brain is raised, and from the refreshed centre goes out a fresh innervation of the circulation, respiration, digestion, tissue change and of the motor apparatus. The effect is a restful sleep, a clear sensorium, a fresher look, active movements, and a surprising desire for food.

To speak more particularly of these effects, and beginning with the *improvement of digestion*, it must must be said that there is not only an increased desire for food, but what is taken is more perfectly digested than before. This shows that there is an increased secretion of the digestive fluids, which is probably to be ascribed only to better innervation. We can in this way feed the patient very differently; and this is of great importance in long-continued fevers, such as typhoid. The *circulatory apparatus* receives its waves of excitation from several sources: by way of the reflexes, a direct excitation from the cutaneous vessels, and finally the excitation of the heart muscle from the cooled blood circulating through it. The succession of phenomena is as follows: The first perceptible action of the bath is the contraction of the peripheral vessels (often to the extent that the pulse disappears), so far a direct action; then increase of blood-pressure and overfilling of the vessels in the internal organs, and after a time relaxation of the peripheral vessels and invariable persistence of the high blood-pressure. The heart works slowly and forcibly, the vessels show an improved tension, as recognized by the decrease of dicrotism and the return of the elasticity-elevation.

The *respiratory apparatus* is excited by the peripheral irritation to deeper and slower movements. The improved sensible innervation of the mucous membrane supplied by the vagus causes reflex cough, by which collected secretions are thrown off. In this way the formation of bronchial obstructions, atelectasis and catarrhal pneumonia, is better avoided than by the usual advice to turn the patient on the side from time to time; a recommendation which I think purely theoretical, since, on the one hand, a typhoid fever patient cannot remain on the side for

a long time, and, on the other hand, the former conception of the mechanical origin of hypostatic pneumonia is, in my opinion, very faulty. What is necessary is, not lateral decubitus, but deep respiratory movements with expansion of the lower and posterior portions of the lungs, and the normal sensib lity and excitability of the bronchial mucous membrane, so that the collection of mucus and the consequences of bronchial obstruction, atelectasis and catarrhal pneumonia, will be avoided.

The *visible secretions*, the urine, the saliva, tears and sweat, are increased by the bath treatment. The tongue is moist, the eye is bright, and the skin is soft and supple.

Finally, the *favorable action on the trophic spheres* is shown by the non-appearance of bed sores, etc. Besides the trophic innervation the conditions of the circulation (blood-pressure, rapidity of the circulation and vascular dilatation), also play an important part here.

The *form*, *duration* and *temperature* of the water-treatment is determined by the indications of the individual case. The complete bath must be regarded as the most effective, convenient and pleasant form of hydrotherapy; in this all experienced observers are agreed.

The temperature of the water and the duration of the bath are regulated by the stage of the disease, the height of the temperature, the quality of the heart's action, the condition of the nervous system and the general constitution of the patient. We may say generally, the more recent the affection, the higher the temperature, the more resistant the heart and nervous system, and the stronger the constitution, the colder and longer is the bath, and the more frequently is it to be repeated. Very low temperatures for the bath have been lately discarded by the greater number of authors, and it is seldom that a temperature lower than 65¾° is used. In most cases I use baths between 72.5° and 86°, according to the individual constitution, though in early cases, with strong constitution, baths of 63.5° to 65¾° are frequently given. The bath at the temperature of the room is very pleasant. The patient is placed, as often as necessary in twenty-four hours, in the same water, this being renewed only in the morning. As a rule, however, a temperature of 65¾° is too low.

The average duration of the bath should be from fifteen to twenty minutes. The number of baths in twenty-four hours varies according to the intensity and resistance of the fever, between two and six; I seldom use a larger number. We can best determine when the bath is to be renewed, by the tem perature. Brand's recommendation to bathe when the axillary temperature reaches 103.1° must be criticised as routine practice, but as a rule it is correct. Frequently there are cases in which we must order the bath when the temperature reaches 102.2°, and other cases in which we do not, or generally do not, bathe even at 104°. In my opinion the reaction of the patient after the first bath is an important point, and this is best determined by the condition of the nervous system, the pulse, and by the subjective condition. Of course the effect on the temperature of the body is very important, but this is not the only thing to be considered; some constitutions are but little affected by cold baths, though they are again and again desired because they are refreshing, give a good pulse, and are followed by sleep, while the temperature is lowered only slightly and for a very short time. In other cases, especially of nervous constitution, the action of cold baths is often unsatisfactory. True, the temperature goes down for a few hours 3.5° or 5°, but the patient feels uncomfortable, chilled, and has not the desired refreshed sensation.

You must consider that in private practice attention must be paid to the subjective sensation of the patient, and to the sentiments of his friends, and you must always use the mildest measures when it can be done without injury to the effect desired. The miserable condition of a patient for an hour after a too cold bath, and the frightful appearance which he presents, will not add to your reputation. And the bath has here failed of its purpose, since we wish a refreshing, an enlivening action on the nervous system, not depression or shock. For twenty years, therefore, I have recommended for private practice the gradually cooled bath, and I can now most highly recommend it after an experience with thousands of cases of typhoid fever and other infectious diseases.

The patient is placed in a warm bath of 90.5° or 86°—this is always 14° or 18° below the temperature of the body, and in proportion to it is still to be considered cool—and then the water is continually poured over him with the hands or a large sponge. While this is being done cold water is very slowly poured in at the foot of the bath tub, and thus the temperature of the whole bath is gradually lowered to 77° or 72.5°, until the patient's teeth clatter, or he declares that he cannot stand it colder. The patient must now remain in the bath as long as possible, say fifteen or twenty minutes. He is then taken from the bath and placed on a blanket, previously warmed, and he is wrapped in this without being dried. In this he remains in the greatest comfort for a quarter of an hour, when he is rubbed dry, clean linen put on, and he is allowed to sleep.

By this form of bath we have entirely in our hands the degree of reflex action desired, and at the same time as a measure of the amount of action we have the objective state and the subjective feelings of the patient. The cooling of the blood by the gradually cooled bath is not less, though the sensation of shock is absent, than by the very cold bath, because the bath can be kept up as long as desired. And I think it better to fall a little short of our purpose by the use of the warm bath than do too much by the cold bath. In regard to the individual expressions of physicians who do not recommend the gradually cooled bath, I can only attribute them to insufficient experience. But I can say that every physician who, like myself, has had personal experience with the different forms of baths, both on patients and himself, will endorse the luke-warm and gradually cooled baths.

Warm baths of 90.5° to 95,° though not much below the normal temperature of the body, are never-

theless 12° or 14° below the fever temperature, and while the reduction of temperature is not inconsiderable, it is insufficient, and the reflex action is very slight. The warm bath is therefore especially suitable for those cases which the older physicians described as febris nervosa versatilis, cases which have the character of irritable weakness to a marked extent. Such cases, in which the infection so frequently shows a malignant character — we see them in measles, scarlet fever and small-pox as well as in typhoid and other affections—bear the shock of a cold douche or a cold bath very badly as a rule, at least at first; and the subjective and objective actions of tolerable warm baths seem therefore praiseworthy. A sleep after the bath is especially important, as by it the brain has a rest which it obtains in no other way. When the extremely irritated nervous system has been quieted to some extent we can very soon follow the warm with the gradually cooled bath, and even with baths at 77° or 72.5°.

It would of course be very wrong to have the same bath-temperature for every case and for every stage. Individual indications are here very necessary in order to obtain the proper effect. Not only do different constitutions and different conditions of infection need very different temperatures and forms of baths, but the temperature of the bath should vary a great deal in the course of the same sickness. In the case of a weak, nervous woman who comes under your care in the second week of a neglected typhoid the condition of the nervous system, of the temperature, pulse, etc., will show that you can only use warm baths of 90.5° to 95,° and perhaps add a short douche or a wet-sheet. If the action on the pulse, temperature and nervous system is satisfactory, the bath temperature on subsequent days may be lowered to 86°, and later even to 77°, with from four to five baths a day. But in the third week, when there are spontaneous morning remissions, two or three baths of 90.5° may be given each day.

The indications for the temperature, frequency and duration of the bath also depend upon the needs of the individual case. *The sum of the symptoms, the whole clinical picture and the influence upon it of the first baths, but not the effect on the temperature, should alone serve as guides.*

As regards the cold douche I may remark that a short and not too cold douche in the warm bath may be tried in severe asthenic forms of the different acute infectious diseases, and is often well borne. This is especially the case in those infections whose course is rapid, as scarlatina or small-pox, and in which all therapeutic measures must be carried out in a few days.

The simple wet pack probably cannot be considered as having much of an antipyretic effect, as its temperature is very soon raised to that of the body. Ice bladders, of which we make various uses, have a marked local cooling effect, but the effect on the temperature of the body is inconsiderable. They are therefore less serviceable for antipyresis than for antiphlogosis, as in combatting pneumonia.

In regard to the value of the antipyretic drugs, I think that the opposition to them has gone too far. The more recently discovered substances of this class excel the former both in a more certain antipyretic action, which is almost without unpleasant accompanying effects, and in the much smaller dose required. As for the individual drugs, my experience is that the earlier ones, quinine, conchinine, salicylic acid, hydro-quinone, resorcine, and others, are surpassed by antipyrin, thallin and antifebrin. Antifebrin is superior to antipyrin and thallin both on account of its more certain effect (which is almost entirely free from unpleasant accompanying effects), and on account of the small dose necessary as well as its cheapness.

Of the methods of using these drugs, of their principal and secondary effects, I will speak more particularly in the lecture on the treatment of typhoid fever.

ORIGINAL ARTICLES.

PNEUMATIC DIFFERENTIATION AND THE PNEUMATIC DIFFERENTIAL PROCESS. ITS DEFINITION AND GENERAL SUGGESTIONS FOR ITS APPLICATION.

BY HERBERT F. WILLIAMS, M.D.,

OF BROOKLYN, N. Y.

(*Concluded from page 512.*)

Recent research has simplified our classification of phthisis. Certainly as far as indications for treatment are concerned, the all imporatnt question to decide is, when does a degenerative process in the lungs become tubercular? We know that two conditions are necessary: 1. Susceptibility or soil. 2. Impregnation and germination.

The writers in the earlier part of this century recorded the clinical evidence of the liability of even the simplest bronchial catarrh to become an uncontrollable phthisical degeneration. They also recorded percentages of recovery due to what we can now ascribe as due to a continued residence in an aseptic atmosphere. It is possibly true that the bacillus of tuberculosis may find its way into the animal economy through the stomach or by the abraded mucous or cutaneous surfaces. It is absolutely sure that a tubercular person in an ordinary dwelling, theatre, church or closed vehicle, will contaminate the air to such an extent that his companions and neighbors will respire his bacilli-laden breath. All of the factors that prevent germination in such exposures are not understood, but *vital resistance* is the term that thus far conveys the answer. The ability in the subject to establish and maintain the normal equilibrium between carbonic acid and oxygen, and the intelligence and intuition with which we are endowed, lead us to acts of involuntary protection. We are told by sanitarians that the sleeping-room should be the best ventilated room in the house. In many cases tuber-

cular susceptibility is primarily instituted by persistent pulmonary indolence.

In a condition of robust health, the fatigue of the day's exertion, mental or physical, produces relaxation of our nervous energies; our respiratory power decreases, both in inspiratory length and expiratory force; we have a resultant increase of carbonic acid in our general circulation and of course in the medulla and pons, at such a time we grow sleepy, and such a condition is made manifest by our awkward attempts of revival by "gaping," and with the deeper inspiration of this act we succeed for a time in revivifying the sluggish medulla and through it the pneumogastrics, but in a short time and for the same reason our respiration becomes superficial and again we gape, until finally we retire, sleep rapidly supervenes and should we observe the phenomena of the respiration we would find the highest expression of normal breathing. The inspiratory act becomes long, deep and forcible. The air is fairly aspirated into the thorax; the expiration is short, and in the sound sleeper the vibrating nares hardly remit their sonorous rattle before the hungry lungs are again impelling the air with a faithfulness that nothing but their supreme function could demand. Sleep is "nature's great restorer" when conducted in compartments with unlimited supplies of pure air. Recent experiments prove that bacterial germs which are inevitably introduced into the air cells through the polluted air of seggregation, are annihilated by the voraciousness of the tissue cells with which they come in contact when the *vital resistance* of the cell is at the standard of health. Normal sleep then may be a virtual antiseptic process.

It is probably true that the lungs of every man, woman and child in this city have almost daily visitations from circumambient microbes. The bacillus of tuberculosis is no small minority of the sum total, but so long as the lung tissue is maintained at its normal point of *vital resistance*, the bacillis are in nocuous. Pulmonary indolence is the first step to susceptibility.

From such insidious causes down to the most sthenic inflammation that may attack the lung itself we have every gradation of power whose sequential direction is the destruction of the vital resistance. The soil is now ready, impregnation takes place, germination follows; the bacilli seize upon the stagnant lungs, invade the guarding tissue cells, gain an entrance into the blood and lymph channels and the citadel is at once in a state of siege.

From this brief outline it is plain to be seen where we must direct our treatment. I have referred to the indications for treatment in most of the simpler conditions that lead to the graver septic pathological conditions. I will now refer to that department of my subject which treats of *topical medication*.

First, is it possible? One can hardly study the mechanism of the human body and fail to discover the evidence of adaptation of ends to means. We have only to discover the function of a given part or section, when we shall surely find no bungling mechanism that permits or compels its perfect action. We are not to forget that the inexorable laws of physics find their supremest expression in the constant and ceaseless activity of our living organism. Mr. Joseph Ketchum, by a process of synthetic reasoning reached the conclusion that in respiration there must be a difference in size of the breathing aperture between inspiration and expiration before he informed himself that such a provision had been made in the physiological function of the glottis. The theory he advanced in his article upon "The Physics of Pneumatic Diffentation"[1] seems to have been unchallenged, and while it may be possible to supplement the function of the glottis, the ability to condense vapor upon the interpulmonary surface must depend upon the conditions which he clearly indicates. More than this, a close study of the function of the glottis will show that its proper action is an essential, even indispensable condition to life. In the varying humidities, temperatures and densities of our atmosphere, and in many vocations, a continually placid glottis would drown us in a moist atmosphere, or parch and crack our inter-bronchial mucous surfaces in a hot dry atmosphere. This can be shown by the behavior of the glottis in the Russian bath, where the glottis remains wide open during expiration. The respiration of dry air will cause the glottis to contract during expiration, thereby retarding the outflowing air, and keeping a sufficient amount of moisture upon the mucous surfaces. It would seem that the terminal nerve filaments which convey centric impressions from the glottidean region, are rendered obtund by moisture and the reverse by dryness. It is needless to refer to the comprehensive action of the glottis when upon a full inspiration, it is instinctively closed to effect the expulsion of abdominal contents.

In studying this unique mechanism we find it of far more importance than physiologists have ascribed to it; and to maintain its healthy action or to supplement it is the key note to the question of topical medication. I have shown how by forced inspiration and inspiratory differentiation it is possible to convey spray and vapor deeply into the pulmonary structure. It remains to describe such other means within our control as will surely condense saturated air in interpulmonary spaces and cavities.

This contemplates the principal act of the entire differential scheme, viz: Respiratory differentiation. In this act with a variation of, say one inch Hg. from minus to plus, the weight of the normal air with each inspiratory and expiratory act, we are now compelling the circulation of a corresponding increase in complemental air in the complete respiratory act. There must be in this act an assertion of the power of the physiological action of the glottis, as described by Mr. Ketchum in his study of the mechanism of the inspiratory act; but let us see how this may be supplemented.

The patient makes a full inspiration through the ordinary capacious breathing tube, breathing a saturated vapor for temperature and density of air, with the assistance of one inch Hg. minus the weight of normal air *i. e.*, rarefaction. Now, with this act, we have our ordinary quantity of inspired air, plus the complemental saturated air. At this juncture, had

[1] Medical Record, Jan. 9, 1886.

we the physical, or especially the expiratory strength, we could by closing the glottis, and making a violent expiratory effort condense our interpulmonary complement of air; but we are contemplating a measure for the cure and relief of diseased, not healthy humanity. Taking our patient, then, with his lung fully permeated with saturated air (a position he can maintain with comfort for a longer time than if furnished with his ordinary inspiratory force), we will now call upon him to give us his full expiratory power, at the same time giving him the assistance of say one inch Hg. plus the weight of the normal air *i. e.*, compression in the cabinet. We will do more —it will be remembered I said he made his inspiration through a tube of sufficient capacity to produce no obstruction to the inflow—now by the use of the artificial reversible glottis, we will restrict his expirations to a point impossible for him to expire in sufficient time, and with sufficient comfort to maintain his existence without the assistance above described. Now then, a force of one-half pound pressure per square inch is being exerted about the superficial area of the lungs, and upon the saturated air therein. This air is restricted in its outflow to a degree which will admit of the dynamic value of pressure in producing compression of the interpulmonary air, and at the same time permit a comfortable and sufficient respiration. Respiration may thus be carried on for an indefinite period with the absolute assurance of the deposition of a fixed quantity of condensate upon the interpulmonary surfaces and air containing cavities. This condensate may be increased by heating the vapor to the limit of tolerance and probably safely by covering the thorax with refrigerant bags of salt and ice. I think then, that I have demonstrated that topical application is possible.

Secondly, is it feasible? Whether feasible or not it has been the goal for unlimited professional want and endeavor. I am practically acquainted with the means hitherto within our control by which we have hoped at least, that effectual topical medication was produced. Whatever of scientific basis there may be for such a hope, the fact remains that spray introducing inhalers, nasal and oral appliances have long been used, and constitute in the estimation of many an essential element in the management of phthisical cases.

It is essential to distinguish in this connection between spray and vapor. By the forced inspiratory act, it is inevitable that the small particles of the medicament are given an impetus that carries them deeply into the interpulmonary structure; and where cavities are formed which communicate with the larger and adjacent bronchi, it is equally inevitable that agents in the form of spray can be deposited therein. When spray is finally subdivided or nebulized, such portions may the more easily spring into vapor when the atmospheric variations and temperature will permit. These variations may be found in the contrasted temperatures of the external and the interpulmonary air, and I have already referred to the means by which this can be increased; I have in other papers and discussions pointed out the evidence of the introduction of agents into the general circulation, and to those who have grown skeptical either concerning the power or the desirability of thus producing local and general medication, I especially appeal for calm judgment, lest the failure to produce a salutary effect may be as much the result of an ill chosen remedy as the possibility of its non-application. It is idle to adduce argument to prove that every professional man knows, ether, chloroform, nitrous oxide, etc., are, strictly speaking, vapors. We know that their action depends upon the fact of their entrance into the circulation through the pulmonary avenue.

Every substance is capable of being vaporized, and though those thus far supposed to be possessed of germicidal power, are of a lower specific gravity than ether or chloroform, the deficiency can be counterbalanced by bringing them to their vaporizing point before use. But in a therapeutic sense we are by no means restricted to moist agents. Chemically dry air, the various gases and smoke, may more fully suit the pathological necessity. In the selection of dry agents, respiratory differentiation, with restricted expiratory aperture should be used, for the compression so effectual in squeezing the moisture from saturated air, will as effectually disseminate air and its dry contents into such communicating bronchi and vesicles as would resist the ordinary respiratory current, and the diffusion dependent thereupon. When primary infiltration is a tubercular deposit or a neoplastic growth, of course the pulmonary structure at the seat of such disturbance has become pathological and impervious to air. It is not in the province of this paper to theorize on the etiology of tubercle, or to present such facts as may go to show the possibility or impossibility of clearing up such a deposit by any treatment medicinal, climatic or mechanical. It is my conviction, nevertheless, that any demonstrable area of lung tissue which is tubercularly infiltrated must forever remain so, or else softening, ulceration and excavation must take place. It is with a full realization of such a probability that I would urge the unremitting use of antiseptic vapors, for the purpose of circumscribing the area of deposit by rendering the contiguous lobules sterile to the bacillic germ. Ulceration and breaking down may take place. Here it is of paramount importance that antiseptic vapor be not only introduced, but forcibly introduced to secure a more thorough evacuation of the ulcerated area. It has been my good fortune to see recovery take place by such a chain of pathological and therapeutic events.

In fibrous degeneration of the lung, tubercular infection does not supervene as rapidly or as constantly as in the prodromal catarrhal inflammations. One reason for this may be that the cells of the hyperplastic tissue are as voracious for the bacilli as the normal histological tissue cells. True fibrosis of the lung is a chronic change that will resist every effort to restore its function, but such patients have normal lung tissue left, or they would not be alive, and it is the gradual involvement of these healthy areas that finally gains it the mastery of the subject. Judicious and occasional treatment with such agents

as act as emollients to the intercurrent congestions and catarrhs will save lung tissue, prolong life and render existence comfortable.

It is in these cases that over zeal in frequency, force and duration of treatment may work harm, and in the judgment of competent observers $\frac{4}{10}$ to $\frac{6}{10}$ inspiratory differentiation from five to ten minutes, once or twice weekly, will gain them all the benefit to be derived. Where respiratory differentiation is chosen $\frac{2}{10}$ to $\frac{4}{10}$ excursion is sufficient.

Little further need be said concerning the various forms and manifestations of phthisis. While the several forces of the differential process at our command enable us to manipulate and adapt the treatment that advanced disease demands—in other words to treat it—the supreme importance of bringing our skill and energy to bear at a time of more equal warfare is manifest. Nothing that experience has shown to be of benefit should be omitted, and in so far as this may apply to the dietary or as a means for the preparation for climatic sojourn, the skillful administration of pneumatic differentiation will be found a potent auxillary.

For the general manipulation of phthisis I would advise the following: *First*, residual air expansion, repeated once or twice; *Second*, respiratory differentiation with artificial reversible glottis, restricted expiratory aperture, from five to ten minutes; *Third*, the sitting may be concluded by inspiratory differentiation. In early phthisis with prolonged expiration, forced inspiration with high rarefaction one to two inches through a constricted inspiratory inlet, may be interspersed with the last act. Treatment conducted in this manner, will in a few inspirations lower the rarefaction in the cabinet. When it has reached $\frac{6}{10}$, inspiratory differentiation can again proceed; spray can be used with the forced inspiration, and the condensation of such of it, as springs into vapor may be produced by compelling the patient to make an expiratory effort through a constructed expiratory outlet, but such act is exhausting and unnecessary when the respiratory act is used. In respiratory and inspiratory differentiation spray, vapor, antiseptic gas, or air, should never be ommitted; *Fourth*, Cogwheel respiration and prolonged expiration may be treated by respiratory differentiation with artificial reversible glottis with constricted inspiratory and free expiratory aperture—(The patient simply reversing the artificial glottis in the breathing tube); *Fifth*, the duration of treatment and the length of each sitting must depend largely upon the character of the disease, and the evidence for good or evil that is gained as the case proceeds.

The acute affections will rarely require more than from two to six daily consecutive applications. Cases that demand correction of faulty development, weekly or bi-weekly expansion, covering a considerable period of time. The same for anæmia, chlorosis, amenorrhœa, sleeplessness, anorexia and assimilative deficiency.

In early phthisis daily treatment from ten to twenty minutes should be given until all adventitious sounds disappear, the sputa free from bacilli or absent altogether. The treatment can then be relaxed, but such patients should be cautioned to present themselves occasionally for inspection and treatment. This provision is as imperative as to command them to report for consultation upon the advent of any symptom which they themselves recognize as demanding treatment.

In the diagnosis of early phthisis we must have the courage of our convictions. To temporize with one small râle, to allow our sympathy and generosity to explain away a symptom like a slight hæmorrhage or a persistent anæmia, or pallor, or loss of weight, is a breach of faith as flagrant as any error we can commit.

In chronic phthisis treatment should be given daily for a week or ten days, then tri-weekly, bi-weekly and weekly, and covering a long period of time, perhaps for months and even years. As sad a mistake as can be made is to promise too much, or to allow a patient of this class or his friends to hope for an absolute restoration to health. If such a happy result is attained it can be accepted with good grace by all concerned, but opportunities for infinite good may be lost by promise or hope of impossible accomplishment. Such cases do not require the extremes of pressure and rarefaction as the earlier and acute cases. The value of climatic treatment is indisputable, but with such means within our control the failure to prepare the patient's lungs for the full advantage of any particular locality would seem as absurd as to send a man with purulent ophthalmia and conjunctivitis, to view the beauties of an art gallery, or the grandeur of a summer's sunset.

Sixth, primary hæmorrhage must be treated by inspiratory differentiation. *Seventh*, *Medication*. In the choice of agents much must depend upon our knowledge as therapeutists. While it is undoubtedly true that sedative and emollient agents will allay the excess of bronchial catarrh in chronic phthisis, there is nothing so ethereal about pulmonary tissue that shall prevent it from responding like the other tissues of the body to well chosen antiseptic agents. The general tendency in the profession now is to discard polytheraphy, and especially in the conservative measures of antiseptic surgery; and if we are to indulge the hope of the discovery of an efficient germicide against the bacillus of tuberculosis, we must select single agents and follow them to the finish. Where such agents are vaporized as by Dr. McCaskey's vaporizer[2] their doses must depend upon their point of air saturation, but when projected by spray they must bear a certain per cent. of the solution sprayed. Glycerine, cosmoline, and agents of like specific gravity make a seductive spray, and perhaps in appropriate conditions an effective one; but for a pure antiseptic effect we are not to forget that impure glycerine, the sugars and oils may be efficient cultivating mediums for bacterial propogation, and if successfully impelled into pulmonary spaces may make a rich pabulum for the microbe we are seeking to destroy.

[2]Dr. George W. McCaskey, of Fort Wayne, Ind., an earnest co-laborer in this work, has devised a vaporizer, whereby we can keep a cubic foot of air saturated with the vapor of any agent. An article descriptive of this will shortly be presented to the profession by Dr. McCaskey.

How far this may apply to moist agents of any description can only be determined by careful and continued study. If we are to reason from analogy or to act on the hints that we gain from the study of climatic treatment, we must primarily conclude that cases that should do well in warm, moist atmospheres of southern climates will do well with antiseptic vapors and spray; while those cases that should show improvement in cold, dry climates would best respond to dry dehydrating agents. The range of medication being so thoroughly under our control, it must require as good judgment and discrimination as by internal medication. I have found a hint in treating some cases, by changing as much as possible the character of the air from that in which the disease developed, and I have further found preliminary course of cabinet treatment to materially aid me in the selection of climate for individual cases. While the rapid improvement that has supervened upon a climatic change, after a preliminary course of pneumatic differential treatment may be ascribed to the effectual expansion thereby induced, I am sure I am warranted in my conclusion that a measure of the benefit is due to thorough disinfection of the lungs and the evidence gained of the patient's tolerance of moist or dry air, as the case may be.

I will mention a few of the most important agents that I have thus far used: Dry air, this can be easily furnished by attaching an U tube to the breathing faucet, and packing the tube with pumice stone and pure sulphuric acid; or absorbent cotton borated or mercurialized may be loosely packed in the tube.

The bichloride of mercury in solution of a strength of $\frac{1}{5000}$ to $\frac{1}{2000}$.

Lugol's solution 10 to 50 per cent.

Creosote 10 to 50 per cent.

Pure carbolic acid 10 to 50 per cent.

In using the last two agents I have projected the spray with the "Semple Inhaler," using equal parts of pure glycerine and water as diluents.

Oxygen gas and the per-oxide of hydrogen may be appropriately applied. I am now using C. P. glycerine as a de-hydrating and disinfectant spray.

As emollient and sedative applications I have used morphine, cocaine, atropia, stramonium, and a weak emulsion of peppermint oil.

It is unnecessary to make further reference to special agents. The list is as extensive as the materia medica, and as in other departments of medicine, each practitioner will find certain agents to behave better in his hands than in those whom he seeks to instruct, yet as there is probably but one best way to do everything, it is equally probable that there is but one best bacillicide and one best opportunity for its perfect work.

450 Classon Avenue, Brooklyn, N. Y., April 26, 1887.

BERGEON'S METHOD OF TREATING PHTHISIS BY GASEOUS ENEMATA.

Read before the Chicago Medical Society, April 18, 1887.

BY FRANCIS J. CRANE, M.D.,

OF CHICAGO, ILL.

In January last, the *N. Y. Medical Record* contained an article headed "A New Treatment of Phthisis," which gives a brief outline of Dr. Bergeon's method of administering carbon dioxide mixed with sulphuretted hydrogen gas, and referred to an article published in the *British Medical Journal*, of December 18, 1886. This described in full the apparatus and mode of using it, and stated they had been procuring beneficial results by the method, and that Professor Cornil, of Paris, had also become an enthusiastic supporter of it. This led me to write to Dr. Bergeon, and in the course of my correspondence, he presented me with an apparatus, as well as with the treatise of Dr. Morel read before the French Academy last June, and also one by Professor Cornil. These are so exhaustive that I have embodied in this paper only the essence of both, as follows:

New treatment of the diseases of Respiratory Organs and Septicæmia by the means of Gaseous Enemata according to M. Bergeon's Method. By Dr. V. Morel. It would seem from the statements of physicians who have tried either to prevent the development or the proliferation of the bacillus, or to destroy it, that it is the one thing which we have to overcome in the treatment of phthisis. In reasoning by analogy with other contagious diseases, as, for instance, cholera and hydrophobia, it might be urged that the bacillus is not the immediate cause of the morbid phenomena of tuberculous affections. It is known that, aside from miliary tubercles, which invade the lungs and are the cause of the patients' symptoms, the gravest phenomena of phthisis are due to the septicæmia, which poisons the patient, and is caused by the suppuration of the tubercles, which, brought in contact with air, undergo putrefaction and are absorbed into the system. The bacillus' work, then, by producing lesions of texture, which become fatal to the organism by rapidly destroying or, by undergoing softening and absorption, produces septicæmia. To use Darembourg's expression: "The bacillus is nothing, but septicæmia is everything."

In acknowledging that it is not necessary to ascribe to the microbe all of the morbid phenomena of phthisis, it is not less true that its presence is to the organism an incessant and real danger, and that consequently, in endeavoring to discover a remedy for the lesions which it has produced, it is necessary to destroy it, or at least to neutralize its action. For this purpose such agents as sulphuret of hydrogen, bisulphide of carbon, and other antiseptics mixed with pure carbonic acid, are employed.

Principles of Bergeon's Method.—The first mode of treatment thought of consisted in applying by inhalation some substances having parasiticidal properties. It is known that antiseptic substances are poisonous when introduced into the arterial system, either directly or by inhalation. Claude Bernard has

shown that poisonous gases introduced into the arterial system through the lungs produce toxic effects almost instantaneously. Besides, the antiseptic substances have an irritating action, and this action, operating on diseased lungs, will only increase the existing lesions, while their unpleasant odor aroused a refusal in the patients to their use; this is probably the reason why so little success has been obtained by inhalation in the treatment of phthisis, and is conclusive proof that the introduction of antiseptics by the stomach is preferable, for Cl. Bernard has shown that when a poisonous or medicinal substance is introduced into an organ distant from the arterial system; into the digestive tract, for instance, it cannot enter the arterial system, because it is expelled before reaching it. It must pass through the portal system, the hepatic veins and the pulmonary texture, there to be exhaled, or it can be expelled in the liver with the bile.

It is well established by experiments that the introduction of poisonous substances into the digestive tube may be done without danger by taking certain precautions, of which the most important consist in not injecting too large quantities at once, and not injecting more before the first has been completely eliminated. What avenue ought to be chosen? The stomach or the rectum? In both cases, the medicament will have to pass through the portal vein, the liver, the hepatic vein, the right heart and pulmonary arteries, but we think the rectal way is preferable, for the patient cannot take a dislike to the antiseptic substances on account of their disagreeable odors.

Gaseous Enemata in the Therapeutics of Respiratory Organs, Pulmonary Phthisis, Asthma, Whooping-cough, Bronchitis, Bronchiectasis, Bronchorrhœa, Pulmonary Catarrh. By M. Cornil.[1] The principle of the action of gaseous infections and of their rapid elimination by the lung, has been given by Cl. Bernard. He showed that when sulphuretted hydrogen is injected into the rectum of an animal, the gas is expelled by the lungs; he proved that we can so inject it in almost unlimited quantities, without causing harm; whereas its introduction by inhalation rapidly occasions grave accidents and the animal's death. However, to introduce sulphurous hydrogen, or any other gas or vapor, into the economy per rectum, for the purpose of destroying the microorganisms which exist in a number of diseases, it was necessary to find a gaseous vehicle, inoffensive to the economy, and easily tolerated by the bowel.

Carbonic acid gas admirably answers the purpose; it is very easily borne by the colon, rapidly absorbed and afterward expelled by the lung, with the medicinal gas which it holds. This gas itself, in all probability, plays a very important part in this new treatment of pulmonary diseases.

Dr. Bergeon, who inaugurated this method, published a few months ago the first results obtained in the treatment of pulmonary phthisis by this method. Physicians of Lyons, Paris, Geneva and Marseilles who have treated phthisis by the method, have generally obtained a very rapid disappearance of the phenomena of pulmonary suppuration, and a progress towards a state of health with all the signs of cure.

Concerning the patients I have treated by this method, I can now assert that the results I predicted three months ago have been achieved. The patients that I considered cured have no more expectoration, and give on auscultation stethoscopic signs which denote the presence of quiescent cavities, or cicatrized lesions. Some of these patients have been obliged to return to a life of labor; nevertheless their respiratory organs have stood the test, and the amelioration obtained has been permanent.

While many patients whom the expectoration once so exhausted, now have only 3 or 4 grams of sputum a day, at the beginning of the treatment it was from 250 to 300 grams. We have found bacilli, it is true, in the sputa of these patients; yet it remains to be discovered whether these bacilli which continue to exist after the return to health have kept their functional activity or not. Whatever may be the mode of action of carbonic acid introduced by intestinal absorption in the venous blood and afterward expelled by the lung, it can be said from the observation of patients, that this gas, filled with proper medicinal substances, greatly modifies the respiratory function, and makes the hæmatosis more complete and easy. It gives a sensation of well-being, followed by an increase of strength and weight, a diminution of fever and night sweats.

The following precautions must be observed in giving this treatment: 1. The CO^2 ought to be as pure as possible, so as not to inflame the bowel. That obtained by the reaction of dilute sulphuric acid on the bicarbonate of soda has always been perfectly absorbed by the bowel without producing any toxic effect.

2. The gas should be collected in a receiver from which the air has been expelled.

3. Make the injections just before a meal, or at least three hours after, and never when the patient is weary. It is necessary to be very cautious in experimenting with other medicinal substances, for if, although the sulphuretted hydrogen is inoffensive, other agents, as turpentine, chloral, ammoniæ, iodine, bromine, ether, etc., may not be, and might be the cause of an inflammation of the intestinal mucous membrane.

It is not necessary that the dose be large; by injecting twice a day 4 or 5 litres of carbonic acid gas passed through 500 grams of sulphur water, we rapidly notice the disappearance of all the phenomena of pulmonary suppuration, either in its acute or chronical state.

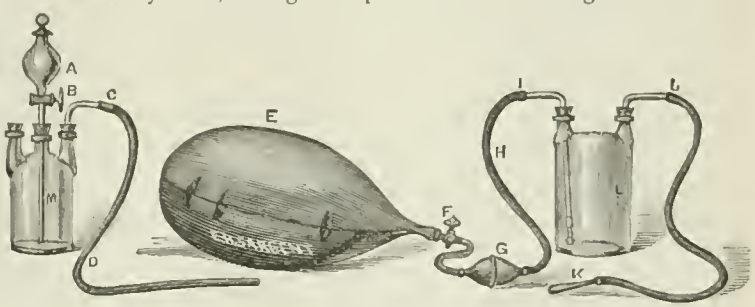
Bergeon's method has been successfully experimented with by Dr. Chantamesse, in his service at St. Antoine Hospital, during the months of August, September and October. The following are his results: "Two patients brought to the hospital suffering with violent attacks of asthma were, half an hour after the injection with sulfo-carbon vapors, entirely relieved of the dyspnœa. The treatment having been continued for a few days, the breathing was relieved, and the attacks were not repeated during the time they remained." Nine patients giving general

[1] See THE JOURNAL, January 15, 1887, p. 69.

and local signs of pulmonary tuberculosis, with tubercular bacilli in the sputa, have obtained very great amelioration from this treatment. The increase of weight has been rapid, one pound and sometimes as much as 35 oz. a week; cough and expectoration have largely ceased. We always find the bacilli in the sputum, however. These patients have been under treatment for one month and a half. One of them has increased nine pounds in weight.

I have used this treatment with four cases; two of phthisis, one of intussusception of the bowel and one of spasmodic croup. With the croup and intussusception it operated like a charm, overcoming both almost instantly. In the case of croup, I used the bisulphide of carbon, and in half an hour the little patient was sleeping, apparently as well as ever.

Case 1.—Mr. W., aged 26. Two sisters and a brother died of phthisis; he had been treating with various physicians and changing climate (having been to Colorado twice) for over three years. The right lung was nearly useless, as it contained a cavity corresponding to nearly if not quite half of its original capacity. Nowhere on this side could vesicular respiration be heard, while the left apex likewise yielded unmistakable signs of disease. There were œdema of the feet, incessant cough, broken sleep, watery stools and ravenous appetite, although he could not retain anything on the stomach; temperature 102° F. After the first injection of bisulphide of carbon, given in the evening, he slept well for three hours and was bothered very little with cough, but on rising in the morning, to use his own words, came nearly strangling for want of a cough, which he finally got, and expectorated a pint with the one paroxysm. I then used the sulphuretted hydrogen water and he improved very fast; in one week he had a normal temperature; night sweats almost entirely stopped, expectoration was much less, and he was able to wear his shoes, which he had not been able to do for over six weeks. Unfortunately, however, at the latter part of the second week he ventured out in one of our rainy March days, took cold, and his death, two days later, cut short the record of what might have proven almost a miracle.



Case 3.—Mrs. W., aged 34, widow, having lost her mother and older sister from phthisis, applied to me for some heart trouble. Complained of a dizzy sensation on rising from a recumbent position; feet swollen some, hectic flush, considerable dyspnœa, slight cough with no expectoration. *Diagnosis:* Incipient phthisis with heart complication? She had noticed, also, for about a week some night sweats, which did not last, however, after the second administration of gas. She improved so rapidly that she only made seven visits in all, and pronounced herself cured. There is, however, no doubt but she will have a return of symptoms upon the slightest provocation.

This comprises all my experience, but these are facts, and facts are stubborn things to deal with. In regard to the best mineral water, I wish to say that, after trying the Lafayette, Ind., the Blue Lick, Ky., and the Ypsilanti, Mich., mineral waters, I am satisfied that the Ypsilanti mineral water is just what we want. It contains 20 cubic inches of gas to the gallon, and is so strongly impregnated with it that I use it over the second time by having solid rubber corks to replace the perforated ones when I have got through using the apparatus. Mr. St. Clair, President of the Company at 88 Randolph St., has kindly furnished a case of 12 quarts of the water, which I have forwarded to Dr. Bergeon, in hopes that it will compare favorably with the Eaux Bonnes water which he is using. I have had an apparatus made by E. H. Sargent, of Chicago, which I think takes the place of Morel's very well, differing from it only in point of cheapness, costing but a little more than one-half the former.

The true place of this mode of treatment cannot be established until the experience of careful observers has been given us, years hence. I wish, therefore, to urge the profession to investigate the matter fairly, since time, I am confident, will prove that Dr. Bergeon has been one of the greatest benefactors of the age.

UNUSUAL METASTASIS IN MUMPS,

With Report of Three Fatal Cases.

Read before the Loup Valley District Medical Society, April 7, 1887.

BY F. D. HALDEMAN, M.D.,

OF ORD, NEBRASKA.

The epidemics of mumps which are of frequent occurrence in almost every community, present some points of interest to which it may be well to refer. But little attention seems to be given in medical literature to the consideration of this disease. Aitken, in his "Science and Practice of Medicine," three volumes of over 3,000 pages, devotes *one page* to its consideration; and that monument to the progress of medical science, Pepper's "System of Medicine," containing about 5,500 pages, devotes less than six pages to the subject; J. Lewis Smith, in his work on the "Diseases of Infancy and Childhood," of over 800 pages, devotes *two* pages to this subject; and yet it is one of our most widely extended and frequently recurring epidemics.

Mumps, as it prevails under the usual conditions, does not possess a high degree of importance, even

when metastasis to the testicle takes place. Under some conditions, however, it develops an intensity of action which is quite unknown to the ordinary course of the disease. During the winter of 1886, mumps appeared as an epidemic in and about Ord; not many children escaped, and a good proportion of adults were attacked. Among the latter were an unusual large number of metastases, and cases of violent and even alarming general derangement. From January 1 to May 20, 1886, there occurred in my practice twelve cases of metastasis in mumps. Out of this number, one died from metastasis to the right lung, and one had serious heart trouble, but recovered, as did the remaining ten cases. Two more fatal cases occurred near Ord, about the same time, under the care of Dr. Klinker, who has kindly given me the history of these very interesting cases. One was metastasis to the liver, causing abscess which opened into the right lung, producing death; and the other was metastasis to the uterus, producing death of a seven months' fœtus and premature labor, followed by the death of the mother on the second day after her confinement. A record of these fatal cases, and of one which recovered, I think of sufficient interest to give in detail.

Case 1.—A young man, 28 years of age, was taken with mumps February 25, 1886. His general health previous to this time had always been good. The disease progressed favorably until March 1, when patient complained of feeling weak and worn out; he had been up and dressed every day, and did not consider himself sick enough to be confined to his bed. On March 2 there was a severe chill, followed by high fever and sweating; patient not able to get up. On March 3 I saw the case for the first time. There was slight swelling of both parotids; left testicle tender and about twice its natural size; temperature 103, pulse 90, respiration 30. Face flushed and the skin bathed in perspiration; frequent and suppressed cough, accompanied by a scanty expectoration of glairy mucus; decided dulness on percussion over the lower lateral and posterior part of right side of chest; crepitant râle heard below the axilla of the same side; tongue coated with a light fur and bowels constipated. I directed poultices to be applied to right side of chest and sweet oil to the testicle; gave a powder of calomel and jalap to move bowels, and gr. viij doses of quinine were ordered to be given every four hours.

March 5. The swelling in both parotids had entirely disappeared; left testicle not so much swollen, but still very tender on pressure; temperature 104, pulse 110, face flushed and profuse perspiration; respiration 40, expectoration still scanty and streaked with blood; percussion and auscultation showed an increase of dulness over the right lung, with mucous râles in that region; tongue coated. The bowels had moved freely the day before; urine scanty and high-colored. The same treatment was continued, and in addition egg-nogg was ordered.

March 7. Patient's condition much worse. He was propped up in bed, as it was impossible for him to lie down. Temperature 106, pulse 150 and very weak, respiration 50 and difficult. Skin bathed in sweat; increased area and degree of dulness over right lung, with mucous râles; retention of urine; tongue covered with a dark-brown coat. Patient became unconscious; respiration more frequent and difficult; expectoration abundant; countenance livid and swollen. He gradually sank into coma, which deepened until it ended in death at 1 A.M. March 8.

This was evidently a case of embolic pneumonia, referable to the parotitis. The minute emboli, derived from the veins of the affected glands, charged with putrescent matter, being arrested in the branches of the pulmonary artery, excited a circumscribed pneumonia which caused a fatal termination.

Case 2.—On May 16, 1886, I was called to see Mr. J. V., a married man, about 28 years of age, whose prostration and general appearance indicated alarming illness. I was informed by his wife that he was taken with mumps on May 5, and seemed to be getting along all right until May 10, when the swelling began to leave the parotids and the testicle became the seat of trouble. His condition did not become alarming until May 13, when he had a sinking spell with pain over the cardiac region; the pulse was irregular and feeble. A physician was called in, and treated the case until May 16, when I was requested to take charge of the case. His condition at this time was as follows: The surface of his body was cold and drenched in perspiration; temperature 97°, pulse 50, small and intermitting; the heart's action was confused and feeble. Auscultation revealed a distinct mitral murmur. Though inspiring deeply, he seemed to suffer from apnœa, breathing hurried and anxious, but the air entered the lungs freely. There was no pain, but great agitation and feebleness, intellect clear. Both testicles were slightly swollen and quite tender. No enlargement of the parotid glands. I prescribed quinine, digitalis, and acid sul. aromatic; applied sweet oil to the testicles and ordered egg-nogg or milk-punch to be given frequently. The pulse became more regular, and his general condition gradually improved. The temperature remained below normal until May 18. The heart difficulty subsided after a few days, and patient was able to be up in two weeks. There was slight atrophy of left testicle, but no other bad results remained.

The metastasis to the heart, producing endocarditis, is an event much to be dreaded, and was caused in this case by septic infection of the blood.

Case 3.—Is one of the cases which occurred in the practice of Dr. Klinker, and the record given to me is as follows: Mr. N., aged 21 years, had an attack of mumps which dated from January 13, 1886. Both parotid glands were affected, and five days afterwards both testicles became tender and swollen. On January 19 the swelling in both parotids began to subside and a feeling of weakness, with a tendency to syncope, followed; that evening he had a chill, and soon afterwards a high fever. On January 20 Dr. Klinker was called, and found his temperature 103°, pulse 120 and very weak, profuse perspiration, pupils widely dilated, tenderness over liver with constant pain in that region; tongue coated with a light fur; *partial paralysis* of right upper and lower ex-

tremities. Did not see patient again until January 23. The temperature at this time was 104°, pulse 130, profuse perspiration, with hurried breathing; right hypochondrium tense and painful on pressure, very distinct jaundice; the paralysis had changed to the left upper and lower extremities. The right thigh became very much swollen at this time, and an abscess formed, which was not opened.

January 26. Patient semi conscious, and breathing with great difficulty. During an effort to cough, there came a large gush of dark purulent matter which filled the mouth, throat and lungs so as to produce imme diate death by suffocation.

Case 4. Mrs. D., 20 years of age, in the seventh month of pregnancy. She was taken with the mumps on April 1, 1886. April 5 the swelling suddenly left parotid glands, and she became very nervous and weak; complained of pain over the hypogastric region. Dr. Klinker reports that at this time her temperature was 104°, pulse 120 and feeble. There was pain and tenderness over the womb, with constant vomiting. Her fever continued high throughout her illness.

April 10. Active labor pains set in, and she was delivered of a seven months' fœtus, which had evidently been dead several days. The placenta came away, and with it a very profuse and *offensive* discharge. The patient became delirious, and died April 12.

I find in looking over the literature of this common disease, that metastasis to the œsophagus is mentioned by Dr. Richard McSherry, of Baltimore, Md.; to the kidneys by Dr. Croner, of Berlin; and deafness coming on during an attack of mumps has been recorded by Dr. A. H. Buck, of New York. Dr. H. V. Logan[1] gives the record of a very interesting case, in which there was double metastasis, and subsequently thrombosis occurred in most of the superficial veins. The left parotid and right testicle were involved at the same time; twenty-two days afterwards the left testicle became involved, and on the fortieth day of his illness inflammation of the right parotid gland set in. These facts indicate the serious nature of the disease, and, as I have already shown, there may be various other complications which are to be very much dreaded. There are no other examples of metastasis so complete and satisfactory as that of mumps, and bearing in mind that both testicles are not unfrequently inflamed during an attack of mumps, it seems very probable that, in many cases, the infectious material enters the circulation and, in passing through organs having a very complex circulatory apparatus, is apt to be arrested and give rise to more or less disturbance.

That mumps is a contagious as well as infectious malady has long been known, but what the nature of the contagium was, has not been so well understood. Dr. A. Ollivier, Physician to the Children's Hospital in Paris, has made some researches with a view of ascertaining the correctness of the results previously obtained by Drs. Capitan and Charrin, who had been occupied in the same line of research. Like these two experimenters, Dr. Ollivier discovered in the different liquids of the body, but principally in the blood and in the urine of patients suffering from mumps, micrococci of a special form. These results were constantly obtained in patients suffering from mumps. Similar researches were made on children in health, and the results were absolutely negative; a fact which shows that there is something specific in the disease under consideration. As it has been shown that the development and propagation of mumps is due to the presence of micro-organisms, it should be considered as an infectious or contagious malady, and should therefore be classed with measles, scarlet fever, small pox, etc.

[*Note*—Since preparing the above report, I have met with a case which shows the importance of this subject, and one of the mistakes likely to occur as a result of complete atrophy of the testicle following mumps: While in Omaha last month I was in the office of Dr. W. S. Gibbs, of that city, when a patient came in who had just met with an accident. It seems that, during an attempt to lift a ladder, he felt something give way in his right groin, accompanied by severe pain and faintness. He was taken to a physician who after an examination, found a tumor in the right inguinal region. After an ineffectual effort to reduce it, and finding that there was only one testicle in the scrotum, he pronounced it a case of partially descended testicle. The patient not being satisfied and suffering intense pain, came to Dr. Gibbs's office. We found a tumor the size of a walnut, and about as hard, lodged in the right inguinal canal; there was only one testicle to be discovered in the scrotum. After inquiring into the history of the case, we found that during boyhood he had the mumps, with metastasis to the right testicle followed by complete atrophy of that gland. The diagnosis of inguinal hernia was then made clear. Dr. Gibbs succeeded in reducing it, after passing his little finger to the seat of stricture at the neck of the sac, and by a process of tearing enlarged the opening sufficiently to allow the strangulated intestine to pass back, when he employed gentle taxis.]

My principal object in this paper has been to call attention to the seriousness of the results frequently attending these epidemics. No doubt some of the many pages of medical literature devoted to diseases which a busy practitioner might not see once in a lifetime, might profitably be given to the discussion of this most common ailment. I have availed myself of every material source of information within my reach, and deeply regret that more has not been published in an accessible form, to aid us in meeting the many indications which are frequently present in this common malady.

[1] Medical News, May 27, 1882.

MEDICAL PROGRESS

Pyridine in Asthma.—Dr. Wyss, of Geneva, in *Der Fortschritt*, No. 1, January 5, 1887, commenting on the treatment of asthma with pyridine, writes: The physiological and therapeutical properties of pyridine was investigated by Professor G. Sée. His pupil, Dr. Dandien, recently published the results of his researches on pyridine and allied basic substances (collidine,) and draws the following therapeutic conclusions: 1. The pyridine is indicated in attacks of angina pectoris. Its effects are very rapid. Its use prevents other fits. 2. In asthma, be it of nervous, emphysematous, or catarrhal nature, in the pathological as well as in the symptomatic asthma, the effects of pyridine are superior to those of injections of morphia; they are of longer

duration, and perfectly devoid of dangerous consequences. Moreover, pyridine is not merely a palliative, but really a curative remedy. 3. It is equally indicated in asthmatic attacks brought on by inhalation of poisonous gases. 4. Its beneficial effects are improved in dyspnœa of bronchiectatic and and tuberculous patients, and in dyspnœa in consequence of laryngeal affections. There is no contra-indication against the use of pyridine. Its absorp tion and elimination by the urine being very rapid, no accumulative effects are to be apprehended. Germain Sée gives the following directions for its use: 4 to 5 grammes (about 4 scruples) are poured into a small plate and placed in the midst of a room of 25 cubic metres. The patient, sitting in a corner of this room inhales the volatilizing pyridine mixed with the air. In urgent cases the pyridine may be directly inhaled by pouring four to five drops of it on a pocket handkerchief, which is held before the patient's mouth and nose. Further independent observations will prove whether the properties of the pyridine bear out the extraordinary praise with which Dr. Dandien extols the efficacy of this remedy. The great drawback is the strong, disagreeable smell, reminding of rotten fish, of the slightly yellowish fluid, which will not be easly concealed. Dr. Wyss adds: I tried the pyridine in only one case of a female patient, suffering many years from asthmatic attacks, in which the remedy had unmistakably a beneficial effect. The patient, aged 44, has since December 16, regularly, daily, three inhalations of pyridine, and has since been free of fits; whilst, before resorting to this remedy, she suffered at least twice a week from very severe asthmatic attacks.—*London Medical Record*, Feb. 15, 1887.

Action of Pyridine on the Function of Respiration.—In health and in disease, says Silva, (phthisis, pleurisy, chlorosis, etc.,) inhalations of pyridine have the effect of diminishing the quantity of air respired in a fixed period of time; sometimes by 500 cubic centimètres, sometimes even by 2,000 cubic centimètres, according to the time the inhalation is given. Notwithstanding this, the feeling of need of air diminishes. The respiratory curve shows that in the healthy man pyridine produces at first an expiratory dyspnœa; the respiration then becomes less frequent, irregular, preventing true periods and sometimes long intervals of apnœa. After the inhalation the respiration remains less frequent and less full, with deep inspirations. Sometimes sleep intervenes, and the periodic respiration is then more evident. The inhalation always causes abundant salivation, preceded by a bitter taste in the mouth and roughness of the throat, with constant desire to spit; the nose also runs. The respiratory curves obtained by exciting the nostrils by the faradic current are very similar to those obtained by pyridine. The nose runs, there is salivation, expiratory arrest, the respiration is disturbed and becomes sometimes periodic, and lastly, after the excitement has ceased, there are the occasional deep inspirations, and those periods of apnœa as seen after the inhalation of pyridine. But sleep and the sense of less need of air are wanting. The author therefore believes that pyridine acts on the respiratory centre by means of the trigeminus chiefly, but that the pneumo-gastric also is affected. The influence of pyridine on the pneumo-gastric is also shown by the increased secretion from the bronchial tubes. Pyridine therefore produces irritation of the terminal nasal fibres of the trigeminus, and hence running off the nose, salivation, and expiratory dyspnœa. The action on the bulb by means of this nerve is evident, and the respiratory centre is first stimulated and then paralyxed. This is shown by the diminution of the quantity of the air respired, and by the respiration becoming periodic and superficial. But the action of pyridine is not limited to the respiratory centre in the bulb, but also extends to the higher centre of the cortex, since it produces sleep; and this again contributes to give a periodic type to the respiration and to diminish the quantity of air respired in a given time.—*Loudon Medical Record*, Feb. 15, 1887.

Atropine Injections in Hæmoptysis.—The subcutaneous injection of atropine in cases of hæmoptysis was recommended by Tacke in 1882, and Dr. Hausmann, of Meran, has found it to be a most successful means of allaying recurring hæmorrhage from the lungs. (*International Klinische Rundschau*, No. 5, 1887). The great indication is to allow of the formation of a thrombus in the bleeding vessels, as Traub explained, by diminished blood-pressure. The capillary pressure will be lowered when the smaller arteries have their calibre lessened; hence the use of digitalis, restricted diet, and rest. Reflex vaso-motor constriction may also be assisted by astringents or the application of cold. In chronic (and passive) cases iron is recommended. Ergotine, turpentine, morphine injections, and alcohol are favorite remedies. In passive hæmorrhage from congestion some recommend wine, walking about, and deep respirations; in active hæmorrhage, only rest, ice, and morphine. But there are cases which resist all these measures, and in these Dr. Hausmann has found hypodermic injection of atrophine wonderfully efficacious. The following examples are given: 1. A patient with cavities in both lungs had hæmoptysis twice daily for six days to an alarming extent. The hæmorrhage was then arrested by a hypodermic injection of 0.3 milligramme of atropine ($\frac{1}{200}$ grain nearly). After two months the hæmorrhage recurred, and was only arrested by recurrence to atropine. 2. A patient at San Remo was troubled with hæmoptysis all through the winter of 1884, in spite of every care, and it only desisted in the summer. Next winter at Meran he was again similarly affected for a long time, till two injections of atropine (of the same strength as above) arrested the attack altogether. 3. In October last year Dr. Hausmann at once stopped severe hæmoptysis in a lady who had been treated in vain for eight days by ergotine injections, turpentine, etc, The quantities of atropine recommended for hypodermic injection in cases of profuse or moderate hæmorrhage from the lungs, which resist other means of treatment, vary between 0.2 and 0.5 milligrammes ($\frac{3}{1000}$ grain to $\frac{7}{1000}$ grain.)

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THERAPEUTICS OF THE UPPER AIR-PASSAGES.

How far are the topical measures at present employed in the treatment of the diseases of the upper air-passages, excluding those of a surgical nature, efficient and worthy of confidence? Such was the question discussed before the New York Academy of Medicine on April 21; and the fact that the question was brought up for discussion shows that there is some doubt in regard to the favorable influence of our measures upon the local diseased conditions of the upper air-passages. The question was discussed by Drs. F. H. Bosworth, Andrew H Smith and W. H. Thomson.

Dr. Bosworth takes the ground that when we knew little about the treatment of diseases of the upper air-passages our machinery was very extensive; but now that we finally obtain striking success in the management of these diseases he thinks he may safely say that all the machinery necessary might be carried in a small hand-satchel. As regards topical applications to the larynx, in the early days of laryngology, did any of them, asks Dr. Bosworth, ever do any good? In his opinion, in the whole history of laryngology no case of so-called chronic laryngitis was ever cured by topical applications; and as regards the more serious affections no one ever claimed that topical applications could cure them. "The condition called chronic laryngitis is merely symptomatic and secondary to disease of the nasal cavities in every case. The morbid condition is not an hyperæmia with hypersecretion, to be corrected by an astringent, but rather a perversion of the normal secretion of the part, due to the morbid lesion above." He takes the view that there is no such condition as naso-pharyngeal catarrh in the sense of its being a catarrhal inflammation of the vault of the pharynx. "This disease, which is supposed to consist essentially in an excessive secretion from the vault of the pharynx, due to chronic inflammation of its lining membrane, is a myth. This excessive secretion is in reality diminished secretion. It is a normal secretion from a healthy membrane, but undergoing subsequent change as a result of disease in the part above." Astringents are not indicated here, but some method which reaches the cause or course of the disease, which is situated in the nasal cavities.

In such conditions in the vault of the pharynx as hypertrophy of the pharyngeal tonsil, acute or chronic inflammation, neoplasms, or other diseased conditions consisting in structural changes the indications are for surgical treatment; local agents have no other than a palliative effect. Nor is nasal catarrh a hypersecretion, to be cured by the application of astringents; at least it may be said that even if it is a hypersecretion the whole list of astringents has been tried in vain. "The symptoms of so-called nasal catarrh are due to those morbid conditions of the nasal mucous membrane which interfere with the great respiratory function of the nasal passages—namely, exosmosis of serum. Furthermore, the so-called catarrh of the pharynx, larynx, and trachea are merely secondary to this condition, and not diseases in themselves, being amenable only to treatment directed to the real seat of the disease—viz., the nose."

From his point of view, then, the treatment of catarrhal affections of the upper air-passages consists in the treatment of the nasal passages—which involves the restoration of these passages to a normal condition by the removal of obstructing bone and cartilage, reducing hypertrophied membrane, and correcting hyperæmia or other morbid conditions. It consists in use of the snare, the saw, the knife and the cautery. And of these Dr. Bosworth prefers the cautery.

The views taken by Dr. Andrew H. Smith are somewhat different from those just mentioned. In regard to the doubt as to the efficacy of our methods of treating these affections, this does not exist for Dr. Smith as regards acute and subacute affections. In chronic cases he holds that surgical treatment cannot take the place of local treatment, "and that, when surgery has done all that it can do, there still remain nearly three-fourths of the chronic throat and nose cases for the treatment of which we are dependent mostly upon medicaments applied to

the diseased surfaces." Dr. Smith's statistics are taken from the report of a large throat clinic, in which it is seen that of 1351 cases 370 operations were performed. But it is not very probable that two or three times this number should have been operated upon? Is not much of the difficulty met with in treating these cases unsuccessfully due to non-interference (surgically)? "Under the most favorable circumstances," says Dr. Smith, all we can do toward promoting the resolution of an inflammation is to assist the reparative efforts of nature." But how much, if any, reparative effort is nature making in these cases?

Dr. Thomson begins his paper with the statement that in his opinion, "the treatment of chronic diseases of the upper air-passages should be directed chiefly by two principles: first, by taking cognizance of cutaneous nerve associations in the causation and in the perpetuation of inflammations of mucous membranes; and, second, local disinfection. We know that many persons with chronic mucous catarrhs are affected by external influences which are entirely inappreciable by persons in health, and can detect a draught of air, as from a keyhole, which would be unnoticed by a healthy person. For this weakness, or irritability vaso-motor tonics are needed; and Dr. Thomson knows of nothing which will compare with the local application of the cold. The cold douche to the nape of the neck on rising, care being taken that the hair of the back of the head is not even dampened by the water, and cold salt-water sponging of the throat, according to him, are measures which should be kept up for months together, in all affections of the upper air-passages. But why take care not to dampen the hair? Washing the hair every morning is a measure of cleanliness; why do away with it? When reaction from the douche is established, he says, and the skin is dried, the entire surface of the front and back of the neck and of the root of the neck, and then of the back of the shoulders, ought to be well rubbed with sweet olive oil, to lessen the tendency to perspiration, or at least to check the chilling effects of rapid evaporation of the perspiration. The sensitive surface must then be protected by special covering—the patient should even sleep in woolen night shirts and between woolen sheets. During the day a perforated buckskin shirt should be worn over the light woolen undergarment.

It is in the direction of local disinfection that Dr. Thomson looks for the greatest progress in the treatment of diseases of the upper air-passages, except, of course, in those cases dependent upon malformations, which must be treated surgically. It may be safely said, he thinks, that as pus can be prevented only by excluding germs, so all chronic mucous inflammations can be got rid of only by excluding the presence or preventing the activity of germs. This possibly may be done by improving the resisting power of the tissues, and by using the disinfectants directly; remembering in regard to the latter point, that pure ocean or mountain air is the best disinfectant, and disinfectants of the carbolic acid class probably next best, except for necrotic affections, in which the chlorine class is better (chlorine, iodine, bromine, and sulphur).

PHYSIOLOGY FOR CHILDREN.

In the *Century* for April is an article on "English as She is Taught," by that man of humor and good common sense, Mark Twain. It consists mainly of answers to questions put to pupils in public schools, and gives a very good idea of the mental training received by children in obtaining what is called "an education." It shows, in other words, the folly of filling the minds of children with fragments of subjects which they cannot understand.

Amusing as is the article, it would be more so did it not have the sad side—did it not show how much growth-force, how much brain and nerve force, how much physical strength, are actually wasted to no purpose, and dwarfed. And while reading it we are constantly reminded that adults, "children of a larger growth," are but too often carried on in the same stream, into which they are thrown in childhood, to a ripe age of miseducation. It clearly shows the truth of what has been so often said: the child, or the pupil, must first be made to see, and then to understand what he sees. Space will not permit us to notice more of the article than that containing the answers to the questions on physiology; and from these answers we can readily imagine how the subject was taught—very much as it seems that chemistry (and physiology) is taught in many academic and medical schools.

The first answer, while not sufficiently comprehensive, is fully as clear as some that we have seen: "Physillogigy is to study about your bones stummick and vertebry." The next shows that hygiene is receiving no little attention in the schools: "Occupations which are injurious to health are carbolic acid gas which is impure blood." Dermatologists must henceforth know that "We have an upper and a lower skin. The lower skin moves all the time, and the upper skin moves when we do." We must admit

that the child was not far from the truth who said that "The body is mostly composed of water and about one-half is avaricious tissue." Old as is the science of human anatomy we are constantly learning something new; it has remained for an American child to discover that "the stomach is a small pear-shaped bone situated in the body"; that "the gastric juice keeps the bones from creaking"; and that "the salivary glands are used to salivate the body." The child who gave the following had most probably had a recent séance with the dentist: "The growth of a tooth begins in the back of the mouth and extends to the stomach." Our ideas as to the functions of the cranial nerves must be revised if it be true that "The olfactory nerve enters the cavity of the orbit and is developed into the special sense of hearing."

"If a laugh is fair here," says the author," not the struggling child, nor the unintelligent teacher—or rather the unintelligent Boards, Committees, and Trustees—are the proper target for it. All through these answers one detects the signs of a certain probable fact—that a large part of the pupil's 'instruction' consists in cramming him with obscure and wordy 'rules' which he does not understand and has no time to understand. It would be as useful to cram him with brickbats; they would at least stay." We may also detect another very probable fact: that the teacher has made vain attempts to give instruction in what he himself does not understand. "Isn't it reasonably possible," says Mr. Clemens, "that in our schools many of the questions in all studies are several miles ahead of where the pupil is?—that he is set to struggle with things that are ludicrously beyond his present reach, hopelessly beyond his present strength?" It seems so.

MANIA FOR NOVELTIES IN MEDICINE.

Probably there is to be found no period in the past history of medicine, characterized by such an active strife for making new discoveries, not only in the prolific realm of bacteriology, but in new therapeutic inventions and in novel applications of old remedies, as is the present. The mania for discoveries and inventions and the thirst for novelties has become fairly epidemic. It is only necessary to invent some kind of apparatus and either some new remedy or some new combination of old ones, apply them to the treatment of a few cases of some dangerous form of disease, or, still better, to disease in such stage of advancement as had been regarded hopeless, and report some striking improvement, before time enough has elapsed to make permanent results possible, and it is at once heralded as a grand achievement. It is so important that it cannot wait for the slow circulation of the medical press, but quickly reaches the profession and the public simultaneously through the daily secular press and telegraph. And now comes the strife between the ambitious doctors to be first in the field with the new remedies, and if the more considerate would like to delay until more reliable results could be possible, their patients speedily compel them to fall into line, or abandon them for those who have succeeded in first becoming armed and equipped for the new method of miraculous healing, until the manufacturers are hardly able to supply the needed materials.

It makes no difference whatever, whether the morbid conditions to be cured are lungs containing one hundred suppurating cavities varying from the size of a pea to that of a hen's egg, and the mucous membrane of the bowels ragged with ulcerations, if a temporary improvement can be maintained for two or three weeks, it is sufficient to constitute the subject of another favorable report, and give an additional impetus to the strife. And yet, as inexorable time moves on just as many thousands of dollars have become invested in the new materials, and the hopes of many thousands of invalids have been revived, the stubborn fact remains, that cancers will not soften and disappear under the influence of condurango, nor a continued fever flee *for good* from a cold bath or a dose of antipyrin, nor a half disorganized lung be reproduced, good as new, in three or four weeks by the magic influence of gaseous enemas. The many medical friends who have written for our *candid* opinion of the value of the Bergeon treatment of consumption, as well as those who are intending to write, may gather from the foregoing our answer; which is, that it is a method of treatment as capable of doing harm, unless skilfully used, as it is of doing good; and that from the known pathological and anatomical changes involved in all the varities of pulmonary phthisis, it is not possible to determine the real value of this or any other method of treatment until a much longer time has elapsed.

PROFESSOR ZIEMSSEN'S LECTURES.—The lecture by Prof. Ziemssen which opens this number of THE JOURNAL is the first of a series of lectures on various subjects, which will appear at short intervals during the next nine or twelve months. Our readers will be pleased to know that we have completed arrangements by which we will publish them from

advanced sheets. Among others the lectures will include the following subjects: "Subcutaneous Blood-injections, Saltwater-infusion and Intra-venous Transfusion;" "Cholera and its Treatment;" "Treatment of Typhoid Fever;" "Diphtheritic Paralyses and their Treatment;" and on diseases of the respiratory, circulatory, digestive, uro-genital and muscular apparatus.

Professor Senn's Letters.—In this issue of The Journal appears the third of a series of letters from Dr. N. Senn to Dr. Christian Fenger. It may be safely said that no such review of foreign surgical work has ever appeared in this country as is being given in these letters, and that few men are so admirably fitted for writing up the subject as Dr. Senn. His tour includes England, France, Spain, Italy, and Germany, including the Congress of German Surgeons, recently held in Berlin. It is with pleasure that we acknowledge our indebtedness to Drs. Senn and Fenger for permission to publish these interesting and valuable letters. The letters will appear regularly.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, April 18, 1887.

The President, W. T. Belfield, M.D., in the Chair.

PRELIMINARY DISCUSSION ON THE TREATMENT OF PULMONARY AFFECTION BY GASEOUS ENEMATA, WITH EXHIBITION OF APPARATUS.

The President: During the last twenty-five years various specifics for pulmonary tuberculosis have been announced by enthusiastic physicians and have successively secured more or less attention from the profession, yet none of these has secured in the hands of others the results claimed by its discoverer. The benzoate of sodium treatment of Rokitansky accomplished nothing in other hands; the phenic acid injections of Déclat were powerless to arrest the disease in any but his own hands; the eucalyptol treatment of Roussel failed in the hands of other investigators. The latest method of treatment—that recommended by Bergeon, of Lyons, after two years' careful observation—has, unlike its predecessors, met with almost unanimous approval at the hands of those who have tried it, including physicians in the Paris and Philadelphia hospitals and several practitioners in our own city. Since the method not only promises well, but is also universally accessible to the profession, it has been deemed advisable to present the subject to the members of the Society in a preliminary discussion this evening. There will be presented communications from Bergeon, of Lyons, Bruen, of Philadelphia, as well as the experience of several gentlemen who have used the method in this city.

Dr. Francis J. Crane read a paper entitled

BERGEON'S METHOD OF TREATING PHTHISIS BY GASEOUS ENEMATA.

(See page 541).

The President: This method of Bergeon has been extensively used in the Philadelphia Hospital, chiefly by Dr. Bruen, who has kindly sent the following résumé of his experience with it:

The experience thus far obtained in the Philadelphia Hospital in the use of Bergeon's treatment of consumption by rectal injections of carbonic acid gas impregnated with sulphuretted hydrogen, has been highly encouraging.

In the *Medical News*, of April 2, 1887, a statement of clinical results thus far secured in my wards, was presented. These results indicated that the element of suppuration in pulmonary phthisis was usually very positively influenced. The night sweats have been controlled in twenty five cases without an exception. The temperature has been modified even in the most advanced cases, and in some instances in which the disease has been extensive it has been brought to a normal point. A peculiarity of the temperature charts seems to be an introduction of a sub-normal temperature in the forenoon. The expectoration has been lessened in all instances, and in some has disappeared. A marked impression has been made for the better on the nervous symptoms which attend the disease, and a more cheerful and sanguine spirit has followed the therapeusis.

It would seem justifiable to conclude that we have a most important therapeutic agent in the gas enemata treatment. One case of acute broncho pneumonia treated on this plan has recovered, and will be discharged from the hospital. The history of her case has been already stated in the article in the *Medical News*. Another case of phthisis with pneumo thorax under treatment for five weeks, is so much improved that the patient insists on her discharge. The râles have disappeared from this patient's chest (the pneumo thorax was local and confined to the lower zone of the right thorax), the opening into the lung has apparently closed and retraction of the chest wall is going on. This patient had been ill for a year previous to admission to the Philadelphia Hospital; the pneumo thorax was noted on admission. She has gained over nine pounds of flesh, expectoration has ceased, sweats abolished. The cough, however, continues as a modified symptom, since she is as yet merely a case of phthisis in stage of arrest, the bacilli of tuberculosis being still recognizable in the sputa.

Two cases of commencing phthisis with moist râles, dulness of percussion, harsh breathing, deficient expansion over right upper lobe, and tubercle bacilli in sputa, have recently been placed under the treatment. In these cases the gain in one week has been most material. The râles have disappeared

and the patients express themselves as benefited. The method of treatment is surely worth a careful scientific investigation.

In our hands a solution of 5 grs. sulphide of sodium and 5 grs. chloride of sodium in 22 ounces of water has proven the most satisfactory substance to produce the sulphuretted hydrogen. A solution more strongly impregnated with sulphuretted hydrogen has not only been more advantageous, but seemed injurious, apparently inducing palor, loss of appetite, and in some cases, irritation of the bowels. The gas should be introduced slowly, not less than half an hour seems requisite for each séance. From three to five quarts can be introduced in most cases, a gain in the tolerance of the necessary distension of the bowel being rapidly acquired. The absorption of the gas from the bowel is very rapid and in half an hour the distension will entirely subside. It is sometimes introduced more rapidly, but the gain is in proportion to the time consumed in giving the gas. The carbonic acid can be pumped through the solution containing the sulphuretted hydrogen by the acid of a ball with valve attachment, and a circular received from Paris mentions an apparatus made by Shet, 79 Rue Phillippe de Girard, on which an indication is placed to register the flow of carbonic acid. A convenient apparatus is now furnished by Evans, 1104 Chestnut St., Philadelphia.

We have not obtained as yet satisfactory results from the examination of urine, or breath, nor of the effect of the treatment upon the bacillus of tuberculosis.

EDWARD T. BRUEN, M.D.

1814 S. Rittenhouse Sq., Philadelphia, April 11, 1887.

DR. R. H. BABCOCK: My experience with this remedy is rather limited, but it seems to me there are several questions which should be considered in speaking on this subject: *First*, is the treatment safe? *Second*, is it applicable in all cases? *Third*, is it a cure? I have already answered these questions in an article in THE JOURNAL which appeared last Saturday (April 16). Practically the treatment is safe under the precautions which are laid down, but Dr. Osler in some remarks before the Philadelphia County Medical Society, narrates a case in which the patient almost succumbed after the first treatment, the gas being charged with a mixture of bi sulphide of carbon and sulphuret of hydrogen. We can also conceive of cases in which, on account of limited respiratory power, the rapid administration of the gas by producing distension of the large bowel would seriously embarrass the limited respiratory capacity remaining in the patient. It is also conceivable that an undue amount of distension in cases of tubercular ulceration of the bowel might be dangerous, possibly producing rupture and peritonitis; and it seems to me this is a consideration which would render us cautious about administering this treatment in typhoid fever. I have had no experience and seen no reports of cases of this disease treated in this way. In regard to its applicability in all cases; that has been partially answered in considering the previous question. It has been the experience of Geneva physicians, as reported by M. Wiss, and of De La Roche, of Lyons, that there are cases which cannot tolerate the treatment at all. One patient who had hæmorrhoids suffered from such colic that the treatment had to be abandoned. Wiss also mentions a case which the treatment has to be abandoned in the course of a month, although superintended by Bergeon himself. I was asked to administer the treatment in a case in which the lungs were so extensively destroyed that it seemed to me unwise to administer it, though perhaps a small amount of gas might have ameliorated the symptoms; but had it been possible to abate or arrest the disease, the patient could certainly not have lived with such a small amount of lung left. Of course this consideration is one which renders the indiscriminate use of the treatment hazardous. There are cases in which the recovery, or arrest of the disease has been so complete that the patients are practically well, and have been able to return to their advocations. However, if we are to estimate this thing by the disappearance of bacilli from the sputum we must say it is not a cure. No case is reported in which bacilli have entirely disappeared. As you know, M. Cornil has instituted a number of experiments on animals with reference to this question, a solution of which we are all looking for with much interest. French physicians are experimenting with a great many other substances.

I am now using the treatment upon two cases, one is bronchitic asthma, but the treatments are too few as yet for me to make any report; I would not wish to say whether the relief that has been obtained is due to the treatment or is merely a coincidence. Another case is a lady aged 34, who has been suffering from phthisis for a year and a half, and who last fall received injections of phenic acid twice daily, without any improvement, who had been taking cabinet treatments from me for six weeks, without improvement, in whom the right lung is extensively consolidated, with a large cavity; in this case the relief for the first week was certainly very surprising. The patient gained in strength and experienced a feeling of well being, or as she expressed it a clearer feeling in her head, a feeling of brightness which she had not had for weeks. She certainly coughed less and expectorated less at a time. Her stools had been clay colored in spite of everything I could do; at the end of a week they were of a natural color. The movement of the bowels was perfectly natural, her tongue also cleaned off in a remarkable manner at the end of five days. The treatments were continued at my office twice a day, and the patient had to come into the city so the improvement was perhaps not quite as great as if she had taken the treatment as home. The second week she did not do quite as well which I attributed to the quality of the mineral water. At the end of two weeks she was improved in respect to all the symptoms which have been related this evening. The night sweats had ceased, her temperature was lower, but not normal—it ranged from 99° to 100⅘°. I took her temperature at 9, 11, 2 and late in the afternoon, and the highest she had with the exception of once was 100⅘, it was repeatedly 98⅘. Her tongue did not remain clean, and her appetite did not improve as I

desired. She gained strength, but there was a complication, tubercular laryngitis, quicker than she would otherwise have done. M. Bergeon states decidedly that tubercular laryngitis has been very greatly improved by this treatment. In the case just mentioned the laryngeal symptoms have improved, but whether entirely due to the treatment I am not prepared to say, as she has had various sprays and one topical treatment to the larynx. Her case is somewhat discouraging owing to the extent of the disease since it is not entirely confined to the right lung. She has complained of no unpleasant symptoms since the first treatment when she complained of a slight burning at the anus and a desire to evacuate the rectum. Once or twice she complained of a little colic. She is now taking the treatments at home and feels very much encouraged, but the outlook to me is not what it should be. I saw her last Thursday, and I felt disappointed to learn that she is beginning to perspire again.

I think all the precautions have been taken in this case thus far, and it proves that the treatment does not give rapid improvement in all cases, and and the fact cited by Wiss, that out of four cases treated in Geneva all died within three months, shows that it does not cure in all cases. However, it is a treatment which is so admirable and furnishes such good results in many cases, that I think all physicians are justified in trying it. Another thing which recommends it is that after the patient becomes accustomed to the treatment it can be handed over to a trusty member of the family to administer. Compared with pneumatic differentiation it offers a much better chance for the improvement of the patient, although there are cases in which pneumatic differentiation will do what this will not. But thus far this method gives better prospects of benefiting a number of cases than any method which has been placed before the profession.

Dr. W. H. Weaver: A case under treatment at the Chicago Policlinic, which is making favorable progress, is one in which there is no doubt of the extent of the tuberculosis in the left upper lobe. The expectoration was quite profuse and contained an abundance of bacilli. She has been failing for two years, but very rapidly for two months. She had fever, night sweats, prostration, wasting loss of appetite, but had not taken any medicine of any sort. She came to the Policlinic dispensary where I treated her; the first time giving her an injection of only one pint of gas. Her temperature that day was 101½; the next day she returned and I gave her a quart injection and her temperature was then $102\frac{6}{10}$; the next day, the third injection, her temperature was normal and I gave her another quart. When she returned for the fourth injection her temperature was normal and she seemed better in every way; said her appetite had returned, the cough was less severe, expectoration diminished greatly, and the night sweats almost entirely relieved. At the fifth injection she had a slight temperature, she said she had had no more chills and fever for the last three days. I used a solution of about 5 grains of sulphide of potassium with 5 grains of common salt in about 20 ounces of warm water, which gives about the proper amount of sulphuretted hydrogen gas, at least the patients all say that they feel better and have no unpleasant symptoms. I have given it in three other cases, one has some pelvic trouble, and the physician who is treating her thinks that might be a counter-indication to the remedy, but she seems to be better in her general condition, has increased in flesh, and coughs less and prefers to continue the treatment. Another case of incipient tuberculosis, where the upper left apex is affected more particularly, seems to be improved considerably under treatment. He has been having the treatment one week.

Dr. L. L. McArthur: In starting in with this treatment of phthisis I saw the difficulties that were going to arise in the apparatus, and think I can make some suggestions that will prove valuable. The apparatus presented to-night is not portable, and if the patients are to be treated at home they would either require a separate apparatus for each patient or else one must run the risk of breaking the apparatus. In the first place, I thought of a method of collecting the carbonic acid gas, by taking one of those portable laughing-gas cylinders, to be obtained at any dental depot, to a soda-water fountain and having it charged with carbonic acid gas. There can be stored from one to 500 gallons of gas, equally chemically pure with that recommended. This apparatus would simply require the turning of a stop-cock in the tube or opening to permit the gas to escape at any rate desired. If found desirable to continue the use of sulphuretted water, instead of mixing the two gases together first, it could be done by using a wash bottle and a delivery tube. I believe an equally efficient method is to introduce into this cylinder a solution of sulphide of potassium, which furnishes for every ounce of the sulphide of potassium about a gallon of sulphuretted hydrogen. The carbonic acid formed liberates the H_2S from the sulphide introduced. The strength according to Bergeon's method is about half of 1 per cent. or a little less. By a little calculation it will be seen that the carbonic acid formed by the combination of the carbon dioxide and water would set free the hydrogen in combination with the sulphur in the definitely desired quantities, so that it would not be necessary to use the sulphuretted water. In that way the gas could be introduced into the measuring bag and then into the rectum. The cylinder would hold a sufficient amount of gas for many treatments, and as it is easily portable, it could be taken to the houses of patients and not require them to come to the office.

Dr. R. Tilley: I have had no experience whatever in this method of treatment, but I would like to say a word with reference to the apparatus which I think would certainly make the measurement of the gases used more definite. I think, notwithstanding the doctor's explanation of the number of pressures that may be necessary to constitute a quart, that one individual may require so many pressures and another so many less or so many more, and thus the amount would be somewhat indefinite; whereas if a bottle of the necessary size was filled full of carbonic

acid gas, and then another bottle with a tube attached full of water, the latter could be attached with the necessary tubes and elevated just the same as a siphon, and the water introduced into the bottle containing the carbonic acid gas and passed through the sulphuretted hydrogen water with the required rapidity, and thus it would come much more regularly than could be done by means of this spasmodic pressure of the bulb. I would like to call attention to the fact that there are on sale in this city large cylinders containing absolutely pure carbonic acid gas, imported from Germany.

DR. WALTER M. FITCH: For generating the gas we use a common Wolf bottle with three corks, one for a stop-cock for the acid, one for the delivery tube and one for the safety valve. This last must not be pressed in too tightly; at one time I had the stop-cock blown out and broken by putting in the acid a little too rapidly. To make the gas we use about a heaping tablespoon of bicarbonate of sodium, covering that with cold water about two inches deep. If we use hot water we make a suds that will foam up and run into the bag. We use the bicarbonate of sodium and sulphuric acid diluted one part in four. The reason for using the sulphuric acid in preference to any other is that, being absolutely non-volatile, none of it will pass over into the bag of carbonic acid gas. To make the gas the generating bottle is connected with the bag, which is emptied and tightly rolled in order to remove all the air. The generator should also be emptied of air by turning in some of the acid before it is connected with the gas bag. The bags usually hold about one-half of what they are marked—a three-gallon bag will hold about six quarts, etc. If we should over-distend it the corks would be blown out of the generator. For injecting the gas the stop-cock is turned off and the bag is connected with the bubbling tube, which extends to the bottom of the bottle of mineral water, so that the gas coming from the bag may pass down into the water and, rising up through it, be medicated by the sulphur vapor which it contains. It is injected by means of a hand bulb. In using the bulb it is important to remember that, since it is intended to be used only with water, the action of the valves is not perfect with gas, and it is therefore necessary that the bulb be held vertically, so that the weight of the valves may assist in closing them. In using it in this way we secure a perfect action which draws the gas into the bottom of the bottle and delivers it through the tube. I have now connected it as it is in use. The bisulphide of carbon has been mentioned several times. In order to use this it is necessary that the gas be washed for fear that it may contain impurities, for none of the chemicals we get are perfectly pure, and as they are most likely to contain vapors of hydrochloric acid which are easily dissolved in water, the gas is bubbled through pure water to purify it. Between the Wolf bottle and the bulb is inserted an ordinary chemical drying tube, a glass tube three-fourths of an inch in diameter, which is drawn down at one end small enough to have the rubber tube slipped over it. Into the other end is fitted a cork with a glass tube through it; in the drying tube is placed a tampon of cotton, and the requisite amount usually 1 dram, of bisulphide of carbon is placed on the cotton. In passing the gas through this cotton it becomes very strongly impregnated with the vapor and is injected in that manner. I think some Philadelphia physician spoke of an instrument for measuring the gas injected. A very simple way of measuring it when using a small apparatus of this kind, is with the bulb. The bulb will deliver at each compression just so much gas; in order to measure how much is delivered we simply take a measured bottle, invert it over the water with the water filling it, then introduce the rectal tube into the bottle and remove the water from it by displacement, the number of compressions being counted. The bulbs vary in size. I remember the capacity of six now in use: two count 15 compressions to the pint; three count 20 compressions to the pint, and one counts 25. Thus, with each apparatus the bulb must be measured, and knowing its capacity, the gas can be prescribed in as definite a way as any medicine measured out of a bottle.

THE PRESIDENT: My experience with this method, extending over less than a month, comprises the observation of one case that impressed me strongly; this was a young man suffering from the last stages of quick consumption, who had been in the care of Dr. H. A. Johnson. He was very feeble, much emaciated, had badly swollen feet and albuminous urine. His temperature ranged from 101 to 103 each afternoon, and he had profuse night sweats. In addition to these usual symptoms he suffered to an extraordinary degree from laryngeal tuberculosis. He had been unable for many weeks to lie down with comfort, and according to his own statement, had not slept fifteen minutes in three months. Cough was constant and expectoration profuse. About a month before Dr. Johnson had given him three or four weeks to live. I used gaseous enemata, employing the artificial solution advised by Dr. Bruen, twice a day. Improvement began on the second day, and by the fourth day was pronounced. The cough was less distressing and the sweats and expectoration had diminished, the patient was able to lie down and sleep for two hours continuously. He was, however, so evidently near dissolution that I deemed it inadvisable to continue a tentative treatment, and stopped it on the fourth day. Two days later he sent an urgent request for the resumption of the treatment, saying that his former symptoms were returning. However, I declined to use the injections further, and six days after their discontinuance the patient died, nearly two weeks after his physician had expected his demise.

It should be remembered that these injections seem to arrest not the tuberculosis proper, but the sepsis which is secondary thereto, and that there are numerous other septic conditions in which benefit may fairly be expected, such as surgical sepsis, diphtheria, puerperal fever, etc. The apparatus furnished by the stores is unnecessarily expensive and inconvenient for a visiting practice. I use an improvised apparatus consisting of a gas bag, double perforated cork and ordinary large wide-mouthed bottle—the whole costing $2.50 instead of $10. The entire

outfit can be readily improvised at a little cost and carried in a small handbag.

My limited experience gives me the impression that the artificial solution of the sulphide of potassium is preferable to either the Ypsilanti or the Blue Lick water, because the amount of sulphuretted hydrogen in these waters as we obtain them at the drug store appears to be extremely variable, while in the artificial solution it can be maintained at a given percentage, increased or diminished as desired, yet care should be taken to make a weak solution about such as is recommended by Dr. Bruen, since a too concentrated solution of the poison may produce very unpleasant symptoms. This method can be employed by every practitioner as well as by the most expert specialist. If it will accomplish nothing more than the relief of the distressing cough, expectoration, fever and sweats of advanced consumption, it will at least do what can be effected by no other therapeutic measure with which I am acquainted; hence it is to be hoped that it will be submitted to a general test by the profession, that we may quickly ascertain exactly its merits and demerits.

Dr. C. M. Fitch said that the first case in which he used the method was one of extreme anxiety to me. The patient, a young lady 20 years of age, had previously had exceptionally good health, was well nourished, with a muscular development that seemed to defy fatigue. She returned in July last from a visit to Colorado with a cough which was referred to the dryness of the climate and the inhalation of the alkaline dust, which causes a catarrhal irritation. This seemed a plausible explanation, and as the cough was not urgent, it received but little attention until, in November, she took a cold which resulted in chills for three or four successive days, and seemed to prostrate her greatly. I then examined her chest and, to my astonishment, found extensive and marked consolidation at the apex of the left lung; there was also irritation throughout the remainder of the lung and some moist râles. I was much alarmed by what I found, for the location of the consolidation made me fear it might prove something more than simple pneumonia. Several of our best physicians tendered their aid, but the case failed to improve. The patient lost flesh rapidly, her cough became fearfully oppressive and her temperature never fell to normal, rarely below 100°, and most of the time 101° and rising to 103°. She had daily chills and profuse night sweats, and the case presented all the features of acute phthisis. At the last examination, made by Dr. Belfield and Dr. Ochsner, both thought they detected bacilli in the sputum, although previous examinations had failed to show them.

Late in January my attention was called to an article in the *Medical Record*, giving a notice of Bennett's paper in the *British Medical Journal*, which contained an account of Bergeon's method. After considerable trouble I obtained a copy of the paper which contained this article, and went to Sargent's to have an apparatus made, and there learned that they had just made one for Dr. Crane, who kindly allowed me to appropriate it and ordered another for himself. Knowing nothing at that time of what we might expect in such a case from our different mineral waters, and knowing that Dr. Bergeon recommended bi-sulphide of carbon as the best substitute, we commenced treatment with the bi-sulphide, and the effect was surprising. The treatment was commenced seven weeks ago to day; during the week previous the temperature had at no time fallen to normal; the lowest point was 100°, and once it rose to 105½°, and night sweats and chills were constant. The first time the injection was tried very cautiously, only a moderate amount of gas being used. The effect was not specially apparent; the second day the temperature still rose to 103°. That night the gas was used much more freely and with results that to us were somewhat alarming. The next morning the temperature fell to 95°, and it did not rise above 100° during the day; the cough was almost suppressed, although it had previously been very distressing. The next day we did not use the gas quite so freely, but the day following the lung was almost entirely occluded; the mucus seemed to become viscid, and the air was almost shut out from the lung. There was so little elimination of the bi-sulphide through the lung that we soon began to have marked symptoms of bi sulphide poisoning, although in many respects she appeared better; the cough was almost gone, and there were no chills. The treatment was discontinued for about ten days, and then resumed with the Ypsilanti mineral water. From that time there has been a satisfactory improvement, and she is better than she has been at any time since her sickness began; her appetite and strength are improved, and she is evidently beginning to gain flesh; her cough is greatly lessened, and the chills have altogether disappeared. Her night sweats have been absent for six weeks, although during the last warm weather she perspired a little for three or four nights; it was not colliquative sweating, and she seems now in a fair way to recover.

The second case in which I tried this remedy seemed about as hopeless as well could be; the patient was confined to her bed, had been suffering from severe hæmorrhage, chills, night sweats, and great prostration. There was marked dulness at the apex of the right lung, and the physician who was treating her recognized softening. The husband, whose family were patients of mine, after the physician told him that nothing more could be done, came to me. I told him that I did not know that I could do anything more; the only thing I could suggest would be this new treatment which I had been experimenting with, and which might be of some value. He was anxious to have something tried, and the case was undertaken. At the end of four days this patient's chills, which had existed then about a month, ceased entirely, and have not since recurred. On the ninth or tenth day the sweats disappeared; her cough was relieved from the first, no opiate could have controlled it more completely. The expectoration was also lessened, her appetite has improved, and she is gaining in strength. In all respects I think she has gained as much in the time she has been under treatment as I ever saw a patient gain under any treatment in the same time.

Another case was a young man of scrofulous habit, who has a stiff knee from scrofulous disease of the joint. He has been under treatment about three weeks. There was marked consolidation in his case, also, at the apex of the right lung, and every indication of phthisis. He has improved materially; his cough is much lessened and he is gaining in strength. The indigestion and flatulence which had previously troubled him very much, has disappeared under the use of the gas; there has also been a great improvement in his appetite.

The other cases I have seen have not been under treatment long enough to justify me in making a report. It seems to me from what I have seen that we have a remedy that is worthy further trial. Whether it will fulfill the promise of its youth we have yet to see. I have no doubt this remedy will relieve spasmodic asthma, and there are other conditions that it would relieve. In puerperal fever I should try it, using the bi-sulphide of carbon, but using it cautiously. I also think it would be of value in malignant diphtheria and typhoid fever.

FOREIGN CORRESPONDENCE

ABERDEEN AND EDINBURGH.[1]

Alexander Ogston—Osteotomy for Pes Planum—Antisepsis in the Aberdeen Hospital—Lumbar Abscess—Fungous Osteo-myelitis of Femur—Dr. Keith—His Method of Operating—Treatment of the Pedicle—Suturing the Abdominal Wall.

Dear Dr. Fenger:—One of the principal objects of my tour through Scotland was to see in the flesh the man whose name I had so repeatedly mentioned to my class, the discoverer of the pus-microbes, Professor Alexander Ogston, of Aberdeen. While the scientific world knows but little of Aberdeen, its Hospital and its University, the name of Ogston has penetrated to all parts of the civilized world. Dr. Ogston is a man in the prime of life, tall, and handsome. Although a profound scholar, an able surgeon, and a splendid writer, he is one of the most modest men I have ever met; a good illustration that greatness is not incompatible with modesty, but rather the reverse. In my conversation with him I could not but draw a comparison between him and the average doctor in a Medical Society, who is full of experience and crammed with positive assertions. Although living in a comparatively small city, Dr. Ogston's life is an exceedingly busy one. He holds the Chair of Surgery in Marshall College, where he teaches the various branches of surgery, including otology, ophthalmology, and gynæcology; at the same time he attends to the clinical work in the Infirmary, and a large private practice. I visited with him the Royal Infirmary, a building more than fifty years old, with 300 beds, nearly one-half of which are occupied by surgical patients. Although the sanitary condition of the Infirmary is quite defective, all wounds showed that even under unfavorable circumstances good results can be obtained by strict antiseptic precautions.

One of Ogston's operations, osteotomy for pes planum, was illustrated by a number of patients in the hospital. The operation consists in the removal, with a chisel, of a wedge shaped piece of the tarsus with the base of the wedge directed downwards, so that when the osseous surfaces are brought into apposition the arch of the foot is restored. Coaptation and fixation is secured with two disinfected bone-nails and a plaster-of-Paris dressing. In all aseptic wounds the bone-nails disappear by absorption. He has done the operation forty times, and has never observed any serious results; and in only one case the deformity returned, and was permanently corrected by a second operation. He does not resort to this operation indiscriminately in every case of flat-foot, but only in such cases which do not yield to simpler measures, such as rest and fixation. About three months are required for firm bony union to take place, and he insists that the patients should not be allowed to step upon the foot before this has taken place, otherwise a return of the deformity would be inevitable.

An excellent proof of the care which is exercised in this old hospital in preventing wound infection, is the fact that all abdominal sections performed by Dr. Ogston and his colleagues, some thirty in number, recovered. For disinfection of the hands and field of operation the surface is washed with soap and warm water, and rubbed with a piece of pumice stone, after which it is washed with spirits of turpentine, and lastly with a five per cent. solution of carbolic acid. The instruments are treated with turpentine, washed with carbolized solution, and immersed in a five per cent. solution of carbolic acid. Dr. Ogston does not hesitate to walk from the dissecting room or after a course of operations upon the cadaver, directly into the operating room and perform any operation, and has never observed any ill results of such a course when the hands are thoroughly disinfected.

I witnessed two operations in his clinic. The first was for an abscess, which had evidently commenced in the lumbar region and had gravitated below Poupart's ligament. He prefers, in all these cases, to make a free incision just above the iliac crest, and drain the abscess from this point. He also called special attention to this method of operation, as it enabled the surgeon to seek for the cause of the suppuration in the lumbar region and the iliac fossa, and to remove the primary cause through the same incision should circumstances dictate such a course. He has never observed a ventral hernia after this operation.

The second case was one of fungous osteo-myelitis of the lower end of the femur, which had been operated upon some years ago, but the pain had recently returned. The femur was opened on the outer surface with the chisel, by removing quite a large piece of the compact layer. The interior was gouged out thoroughly, and after thorough cleansing and disinfection the cavity was allowed to fill with blood, after removing Esmarch's constrictor, and an

[1] By permission of Drs. Fenger and Senn.

antiseptic dressing applied. This manner of hastening the healing process in all wounds attended with loss of substance, first suggested by Schede, has yielded good results in Ogston's hands.

While in Edinburgh I called on Dr. Keith, and spent nearly two hours with him in conversation, which afforded me an excellent opportunity to become familiar with his views on hysterectomy and ovariotomy. Dr. Keith's personal appearance is striking and characteristic. Although not an old man, he shows only too plainly the effects of a life spent in the cause of his profession and for the benefit of suffering humanity. He walks with a stoop, his frail body being bent under the weight of many years spent in the performance of an arduous professional career. The wasted form and the deep furrows in his face only too plainly tell the story of the many anxieties, the hopes and the fears through which he has passed in affording relief to his many clients. A history of his life would reveal many a hard struggle which he encountered in his efforts to reach the prominent position he occupies, by universal consent, in the department of surgery, for which he has done so much in elevating it from the mire of empiricism to the dignity of a science. The unwritten history can be readily read upon his countenance, which shows only too plainly the effects of hard, conscientious work; the thoughtful and sad expression speaks of the many encounters with an ungrateful and unappreciative public, and the many sad experiences with a jealous profession. A look at his eyes, however, must satisfy any one that determination, energy and enthusiasm can live in a frail body. These qualities which he possesses will explain the mystery of the marvellous amount of work which he has accomplished, and the wonderful results he has obtained under circumstances which have discouraged even the strongest of men. When we realize the limited hospital advantages which are furnished him in the Royal Infirmary, we must admire the man who can show such results. The victories which have been so dearly bought at the expense of health, and in all probability of a portion of life itself, are the most appropriate and lasting monuments of an unselfish life spent in the interests of the profession of his choice and suffering humanity. In the Royal Infirmary he has sixteen beds and only one nurse. His son, Skene, is his assistant.

His operations are performed in a small room heated by an open grate fire, and but poorly supplied with light. Only a few students are invited to the operations. The patient is placed upon a board, to which she is fastened with a strap across the hips, and hands tied to it on each side; the board rests with each end upon a table, the operator and assistant standing one on each side between the tables. The room is disinfected before each operation with chlorine gas. The abdomen of the patient and hands of operator and assistant are washed with a strong alkaline solution for the purpose of removing the fatty substances, which, according to Keith, are carriers of the septic germs. After thoroughly washing the parts they are disinfected with a weak solution of corrosive sublimate. Sponges are used over and over, cleansing them after each operation in warm water, and subsequently in an alkaline solution; they are kept for use in a five per cent. solution of carbolic acid. During the operation they are kept immersed in a two per cent. solution of carbolic acid. The spray he has abandoned, since he has suffered from repeated attacks of hæmaturia, and if anything the results have been better since. Instruments are well cleansed after each operation, and during the operation they are kept in the strong solution of carbolic acid. All adhesions are carefully separated and each bleeding point tied with catgut. Ovarian cysts are tapped with a large straight trocar just as soon as the peritoneal cavity is opened.

From the descriptions I had read of his treatment of the pedicle I had always been afraid to adopt his method, but after I had seen the method applied I became convinced of its safety. The pedicle is firmly compressed in his clamp, and two or more cautery irons heated to a dull red heat are applied for a sufficient length of time to heat the metallic plates of the clamp sufficiently to gently cauterize the compressed portion of the pedicle. The compressed tissue must be rendered "dry," and when this has been accomplished it looks like a transparent membrane. Some practice is necessary to graduate the heat for each individual case, but when properly done hæmorrhage never occurs. Dr. Keith affirms that the tissues thus treated do not slough, but are speedily supplied with new blood vessels. He has seen new blood-vessels in the cauterized portion of the stump after twenty-four hours. Before the clamp is removed each side of the pedicle is carefully seized with forceps which do not tear, and any vessel which might contain blood is separately tied. In the many hundred cases treated by this method hæmorrhage was never observed—certainly the best argument in favor of the reliability of the method. The only case of hæmorrhage after ovariotomy which he observed was in a case where both ovaries were removed; on one side the pedicle was treated with the cautery, on the other the ligature was applied. Patient died in six hours. The post-mortem examination showed that death had been caused from hæmorrhage which had taken place at a point where the pedicle had been perforated with a forceps for passing the ligature; the forceps had injured a vein wall, and from the opening thus made the hæmorrhage had occurred.

Suturing of the abdominal wound is certainly done more neatly and thoroughly by Keith than any other ovariotomist. Medium-sized silk is used, cut in length of about eight inches, each end of a suture is mounted with a long, delicate needle, which bears the operator's name. The needles are passed from within outward, and after all sutures are in place they are picked up in a bundle on each side and the abdominal wall gently lifted so as to bring the peritoneal surfaces in accurate apposition, and while an assistant holds the parts in this position by making pressure on each side with his hands, the sutures are tied. To every inch at least three sutures are used. The skin is accurately united by applying a horse-hair suture between each of the silk sutures, thus securing the

most accurate approximation and coaptation of the margins of the wound. After excision of the breast he relies entirely upon the horsehair suture. The wound is covered with a small compress of hygroscopic gauze wrung out of a solution of 1 part of carbolic acid and 7 parts of glycerine. Over this a compress of common gauze or cotton is placed, and the whole retained in place with a flannel bandage. This dressing is allowed to remain for a time, when it and the sutures are removed. The bowels are kept quiet for a week, when a gentle laxative is administered. Catheterization is avoided whenever the patient is able to pass the urine without assistance.

N. Senn.

DOMESTIC CORRESPONDENCE

"RECTAL SURGERY MADE EASY."

Dear Sir:—In a former article in The Journal I exposed the "systems" of rectal surgery practised by numerous Western itinerants and charlatans. In that article I referred to the little rectal "pockets and fringes" or "pockets and papillæ," described by various standard authors, and well known to anatomists as existing at the base of the columns of Morgagni, just above the verge of the anus. A writer of certain lectures and essays on the subject had claimed these as being mainly his own discovery, and urged that they were "lesions," and fearfully bad ones at that; in short, that they should always be snipped out when found. I maintained, on the other hand, that these minute organs were natural, and composed of healthy mucous membrane and connective tissue. I remarked, however, that, like other organs of the body, they sometimes became diseased and required surgical attention, but were not themselves diseases requiring to be split and snipped in ordinary cases.

The *Peoria Medical Monthly* avers that, by admitting such occasional disease and need of surgical attention, I concede all that the author of the essays claims. The editor of the *Monthly* is mistaken as to what had been promulgated. The writer of the essay on "Pockets and Fringes," or "Pockets and Papillæ," as he elsewhere calls them, has shown no disposition to hide himself or his ideas in a corner. He has expressed himself fully on every possible occasion, and loudly makes the following claims:

1. That, as to these "pockets and papillæ," "no mention of them can be found in current literature;" though they are described in various works, both old and new.

2. That these little natural irregularities are "lesions," of the most fearful, health-destroying power.

3. That "they always occasion a spasmodic contraction of the sphincter ani."

4. That "their removal is invariably attended by improvement;" though many patients have got worse instead of better under the treatment.

5. He says: "I am now, as I was two years ago, in favor of removing these rectal pockets under all circumstances, and in all cases in which they are found."

6. He remarks: "I look upon these conditions as being the most mischievous of rectal disorders."

7. He emphasizes with italics the following: "*In all pathological conditions, surgical or medical, which linger persistently in spite of all efforts at removal, from the delicate derangements of brain-substance that produce insanity, and the various forms of neurasthenia, to the great variety of morbid changes repeatedly found in the coarser structures of the body, there will invariably be found more or less irritation in the rectum or the orifices of the sexual system.*" He adds in substance as he proceeds, that while piles, fistulæ, etc., do more or less injury, the principal part of all the above-mentioned obstinate diseases of every part of the body are caused by the "pockets and papillæ" of the rectum, and that the snipping of them out is "invariably attended by more or less improvement." Were good old Hahnemann alive, this etiology of one of his followers would make his hair stand on end.

The writer has made some special rectal dissections in this connection, and may have occasion at a future time to show how the peculiar banded arrangement and loose submucous connections of the thin mucous membrane of the part tend to deceive the unwary examiner.

Edmund Andrews, M.D.

6 Sixteenth St., Chicago, May 5, 1887.

GALVANIC DOSAGE.

Dear Sir:—I have no wish to enter into the controversy that seems to be raging between several of your correspondents on the subject of galvanic dosage, but a statement made by Dr. Martin in his article on the "Treatment of Fibroid Tumors of the Uterus by Electrolysis," which appeared in your issue of April 23, is so remarkable as to call for correction in the mere interest of humanity.

Really strong currents are now becoming possible by the use of direct dynamo circuits or of secondary batteries of sufficient electromotive pressure, and should some physician while using them put Dr. Martin's directions about dosage in practice, the result would be most disastrous to the patient. The particular statements referred to, which appear also in Dr. Martin's letter in the same issue, are those in which he claims to have applied currents varying from 250 to 1000 milliampères without unfavorable results, and even as much as 10 ampères (10,000 milliampères) without giving excessive pain. Since Dr. Martin takes occasion to describe a milliampère meter in his paper, which he states to be correct and evidently uses himself, the extrordinary nature of these claims remained a mystery until the last paragraph of the third section of his paper (page 450) was scanned. He there states that his 1000 ma. were obtained from a battery of 115 gravity cells. Such a thing is utterly impossible, for these cells present an internal resistance of at least 10 ohms apiece —more often 13 to 15 ohms. Placing it at 10 ohms, the total internal resistance of the battery of 115 gravity cells would be 1150 ohms, and with the electromotive pressure of each cell taken as one volt (which is rather high) the greatest amount of current

obtainable from the battery with the metallic poles brought directly together will be shown by the following calculation: 115 volts divided by 1150 ohms equals 0.1 ampère or 100 ma. But as soon as his patient is inserted in the circuit even this amount of current becomes impossible. If one electrode is large and one applied beneath the skin by puncture, the resistance of the body may possibly add only about 850 ohms to the circuit, making a total of 2000 ohms. This changes the results to the following: 115 volts÷2000 ohms=0.0575 ampère or 57 milliampères. This calculation is a simple application of the most rudimental law in electrophysics, and it is but just to suppose that the gentleman making the important blunder pointed out had forgotten about his battery resistance and its effect upon his figures, although the mistaking of 50 milliampères for 1000 is a trifle startling. But even the 40 or 50 ma. really used by Dr. Martin are strong doses when applied to the delicate lining membrane of the uterus or concentrated at a single point within the tissues, and it would seem that some words of caution might be added to both his and Apostoli's commendation of these methods respecting the dangers as well as advantages of such vigorous electrolysis. In my own practice 10 to 15 ma. have been generally sufficient.

Very respectfully yours,

G. Betton Massey, M.D.

1706 Walnut St., Philadelphia, May 2, 1887.

ASSOCIATION ITEMS.

AMERICAN MEDICAL ASSOCIATION.

The Thirty eighth Annual Session will be held in Chicago, Ill., commencing on Tuesday, June 7, at 11 A.M., in Central Music Hall, corner of State and Randolph streets, and will continue four days. Good rooms for the several Sections will be provided as near the hall for general meetings as possible. Registration books will be open in Central Music Hall on Monday, the day preceding the meeting, for those who wish to register early.

In addition to the list of papers for the Sections published last week the following subjects are announced:

Section on Practice of Medicine.

C. H. Hughes, St. Louis, Mo., will present a "Unique Case of Athetosis resulting from Railway Shock." F. C. Schæfer, Chicago, will present a case of "Complete Loss of Scalp, including the greater portion of the Eyelids and one Ear. Treatment by Skin-Grafts. New Scalp."

Section on Surgery and Anatomy.

Edmund Andrews, Chicago, Ill., "On the Solution of Necrosed Bone in Spinal Abscess by Dilute Hydrochloric Acid."

Geo. E. Stubbs, Philadelphia, Pa., "Wound Dressing—Some Notions Accepted, and some under Discussion."

Section on Ophthalmology, Otology and Laryngology.

J. W. Wright, Columbus, Ohio, "Evulsion as a Means for the Radical Removal and Cure of Pterygium;" G. C. Savage, Nashville, Tenn., "The Function of the Oblique Muscles in Certain Cases of Astigmatism;" Edward Jackson, Philadelphia, Pa., "The Effects of Obliquity of the Correcting Lens to the Visual Axis, with practical deductions; also "A New Form of Facial Frame;" Seth S. Bishop, Chicago, "Treatment of Hay Fever;" "Treatment of Chronic Suppurative Inflammation of the Middle Ear."

Section on Medical Jurisprudence.

Joseph Jones, New Orleans, La., "A Claim to Priority in the Determination of the Chemical and Microscopical Characters and Changes of the Blood in the various forms of Malarial Paroxysmal Fever, and the application of the results of their investigations to Medical Diagnosis and Medical Jurisprudence;" Marshall D. Ewell, Chicago, Ill., "Micrometric Measurements, as applied to the measurement of Blood Corpuscles in Medico-Legal Cases;" John Godfrey, U. S. Marine Hospital Service, Louisville, Ky., "Expert Testimony;" H. M. Bannister, Eastern Illinois Hospital for the Insane, Kankakee, Ill., "The Criminal Responsibility of Epileptics;" Rev. Louis Thebaud Jones, Moweaqua, Ill., "The Intimacy of the Medical and Clerical Professions, with the Supremacy of the Former in the Sociological Sense, at Least;" H. C. B. Alexander, Chicago, Ill., "Forensic Relations of the Puerperal State;" John V. Shoemaker, Philadelphia, Pa., subject not stated.

Section on Obstetrics and Diseases of Women.

W. W. Potter, Buffalo, N. Y., "A case of Pyosalpinx—Cure without Operation;" C. R. Reed, Middleport, O., "Case of Tubal Pregnancy, with Specimen of the Anomaly;" Joseph Eastman, Indianapolis, Ind., "Uterine Subinvolution and Areolar Hyperplasia."

RAILWAY RATES.

The following named roads will give reduced fares to all delegates, members, and their families attending the meeting. Return tickets will be issued on the certificate plan *only*. Tickets for the return journey will be sold at ⅓ the highest regular limited fare. If there is no limited fare to a desired point, the price will be ⅓ the unlimited fare. Tickets for the return journey will be limited to continuous passage by first train after they are bought. All tickets for return journey must be accompanied by a certificate signed by the Chairman of the Committee on Transportation, or by an authorized member of the Committee, showing that the holder has attended the meeting. Tickets are good for 10 days from date of purchase.

The roads which will accept return tickets on the certificate plan are:

Baltimore & Ohio (west of the Ohio River).
Buffalo, New York and Philadelphia.
Chicago & Grand Trunk.
Cincinnati, New Orleans & Texas Pacific.
Chicago, Vincennes & Cairo Line.
Chicago & West Michigan.
Chicago, St. Louis & Pittsburgh.
Cincinnati, Hamilton & Dayton.
Cincinnati, Indianapolis, St. Louis & Chicago.
Cincinnati, Washington & Baltimore.
Cleveland, Akron & Columbus.
Cleveland & Marietta.

Cleveland & Pittsburgh.
Cleveland, Columbus, Cincinnati & Indianapolis.
Cleveland, Loraın & Wheeling.
Columbus & Cincinnati Midland.
Columbus, Hocking Valley & Toledo.
Chesapeake & Ohio.
Chicago & Atlantic.
Dayton & Ironton.
Detroit, Lansing & Northern.
Dayton & Union.
Detroit Grand Haven & Milwaukee.
Evansville & Terre Haute.
Flint & Pere Marquette.
Fort Wayne, Cincinnati & Louisville.
Grand Rapids & Indiana.
Grand Trunk.
Indianapolis & St. Louis.
Indianapolis & Vincennes.
Indianapolis, Bloomington & Western.
Indianapolis, Decatur & Springfield.
Jeffersonville, Madison & Indianapolis.
Kanawa & Ohio.
Lake Erie & Western.
Lake Shore & Michigan Southern.
Lousiville & Nashville.
Louisville, Evansville & St. Louis.
Louisville, New Albany & Chicago.
Michigan Central.
Michigan & Ohio.
New York, Chicago & St. Louis.
New York, Pennsylvania & Ohio.
Niagara Falls Short Line.
Ohio & Mississippi.
Pennsylvania.
Peoria, Decatur & Evansville.
Pittsburgh & Lake Erie.
Pittsburgh & Western.
Pittsburgh, Cincinnati & St. Louis.
Saginaw Valley & St. Louis.
Scioto Valley.
Toledo & Ohio Central.
Toledo, Peoria & Western.
Valley Railway.
Vandalia Line.
Wabash Railway.
Wheeling & Lake Erie.
Baltimore & Ohio (east of Parkersburg, Bellaire & Wheeling.)
Baltimore & Potomac.
Bennington & Rutland.
Boston & Albany (on business between common points in New England and points west of, but not including Albany.)
Boston & Lowell.
Boston, Hoosac Tunnel & Western.
Buffalo, Rochester & Pittsburgh.
Camden & Atlantic.
Central Vermont.
Delaware & Hudson Canal Co.
Delaware, Lackawanna & Western.
Fitchburg.
Lehigh Valley.
New York Central & Hudson River.
New York, Lake Erie & Western.
New York, Ontario & Western.
Norfolk & Western.
Northern Central
Philadelphia & Erie.
Philadelphia & Reading.
Philadelphia, Wilmington & Baltimore.
Rome, Watertown & Ogdensburg.
Shenandoah Valley.
Troy & Boston.
West Jersey.
West Shore.

The following named lines offer one and one-third fare for round trip:

Burlington, Cedar Rapids & Northern Railway.
Central Iowa Railway.
Chicago & Alton Railroad.
Chicago & Northwestern Railway.
Chicago, Burlington & Northern Railway.
Chicago, Burlington & Quincy Railroad.
Chicago, Milwaukee & St. Paul Railway.
Chicago, Rock Island & Pacific Railway.
Chicago, St. Paul, Minneapolis & Omaha Railway.
Green Bay, Winona & St. Paul Railroad.
Hannibal & St. Joseph Railroad.
Illinois Central Railroad.
Kansas City, St. Joseph & Council Bluffs Railroad.
Milwaukee & Northern Railroad.
Milwaukee, Lake Shore & Western Railway.
Minneapolis & St. Louis Railway.
Minnesota & Northwestern Railroad.
Missouri Pacific Railway.
Rock Island & Peoria Railway.
Sioux City & Pacific Railroad.
Wabash Western Railway.
Wisconsin Central Lines.

[Other roads will be added as heard from. These lists have been prepared at great expenditure of time by the Chairman of the Committee on Transportation,

DR. LISTON H. MONTGOMERY,
Briggs House, 189 Randolph St., Chicago,

who should be addressed for additional information.]

A list of forty-two Southern roads which will accept return tickets issued under the certificate plan, to members, delegates and their families, who attend the coming meeting of the American Medical Association, providing as many as twenty-five delegates go to Chicago, hold certificates of the Southern Passenger Association, properly signed by the ticket agent at the starting point. The certificate entitling those to return at one-third fare, must be vouched for by the Chairman of the Committee on Transportation, certifying that said member or person has been in attendance at the meeting. Said certificate, however, is good only twenty hours after adjournment:

Alabama Great Southern Railroad.
Atlanta & West Point.
Brunswick & Western,
Central Railroad of Georgia.
Central Railroad of South Carolina.
Charleston & Savannah.
Cheraw & Darlington.
Cheraw & Salisbury.
Cincinnati, New Orleans & Texas Pacific.
East Tennessee, Virginia & Georgia.
Georgia.
Georgia Pacific.
Illinois Central (south of Ohio River).
Jacksonville, Tampa & Key West.
Louisville & Nashville (south of Ohio River).
Louisville, New Orleans & Texas.
Memphis & Charleston.
Mississippi & Tennessee.
Mobile & Ohio (south of Ohio River)
Nashville, Chattanooga & St. Louis.
New Orleans & North Eastern.
Norfolk & Western.
North-Eastern Railroad of Georgia.
North-Eastern (of South Carolina).
Pennsylvania (south of Washington).
Petersburg.
Port Royal & Augusta.
Raleigh & Gaston.
Richmond & Alleghany.
Richmond & Danville, and leased lines.
Richmond, Fredricksburg & Potomac.
Richmond & Petersburg.
Rome.
Savannah, Florida & Western.
Seaboard & Roanoke.
Shenandoah Valley (south of Potomac River.)
South Carolina.
Vicksburg & Meridian.
Western & Atlantic.
Western Railway of Alabama.
Wilmington, Columbia & Augusta.
Wilmington & Weldon.

HOTEL RATES.

In addition to the list given last week, the New Brevoort House offers rooms on the European plan to delegates at 75 cents where two or more persons occupy a room. This House is refitted and refurnished throughout with all modern conveniences, steam passenger elevator, etc.

Charles Gilman Smith, M.D.,
Chairman Local Committee of Arrangements.
Liston H. Montgomery, M.D.,
Chairman Committee on Transportation.

MISCELLANEOUS.

The American Climatological Association will hold its next annual meeting in Baltimore, May 31 and June 1, 1887, immediately preceding the days for the meeting of "The Association of American Physicians" in Washington, D. C. The Secretary is J. B. Walker, M.D., 1617 Green street, Philadelphia, Pa.

Dr. Oscar C. De Wolf, the efficient Health Officer of this City, has been reappointed by Mayor Roche.

A Public Health Conference will be held in Louisville, Ky., on May 24 and 25, under the auspices of the State Board of Health.

Regulation of Practice in Michigan.—A bill to regulate the practice of medicine in Michigan has just passed the lower House of the Legislature.

The Medical Society of the State of California met in its seventeenth annual session in San Francisco, April 20, 1887. The following were chosen officers for the ensuing year:

President—R. H. Plummer.
First Vice-President—A. H. Agard.
Second Vice-President—David Powell.
Third Vice-President—H. N. Rucker.
Fourth Vice-President—L. M. F. Wanzer.
First Assistant Secretary—J. H. Parkinson.
Second Assistant Secretary—G. W. Davis.
Treasurer—G. C. Simmons.
Board of Censors—Jules Simon, W. Anderson, J. D. Arnold, I. E. Oatman, C. G. Kenyon.
Board of Examiners—C. E. Blake, W. Lawlor, Jules Simon, C. H. Steele, T. J. Le Tourneux, C. E. Farnum, A. H. Pratt.
Alternates—H. H. Hart, C. C. Wadsworth, A. P. Whittell.

The Committee on Appropriation for the Ninth International Congress, recommended that $100 be donated. Adopted.

Regulation of Medical Practice.—The following resolution was adopted: "That it is the sense of this Society that the best interests of the public and the medical profession will be better subserved by one State Board of Examiners rather than more; and by examination of applicants rather than of diplomas; and that there should be proper provisions made for expenses of such Board."

Vaccination.—The following resolution was adopted: That it is the sense of the members of the California State Medical Society, in convention assembled at San Francisco, at its regular annual session, that vaccination should be made compulsory, and that the State Legislature should be urged to enact such laws as shall result in the protection of the entire population from small-pox.

[We are indebted to the *Sacramento Medical Times* for advance sheets of this report.]

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 30, 1887, TO MAY 6, 1887.

Major Blencowe E. Fryer, Surgeon, ordered for examination by Army Retiring Board, at San Francisco, Cal. S. O. 101, A. G. O., May 2, 1887.

Major George M. Sternberg, Surgeon, assigned by the President to the special duty, under the Treasury Department, of "investigating the merits of the method practised in Mexico and Brazil for preventing yellow fever by inoculation." Relieved from duty as attending surgeon and examiner of recruits in Baltimore, Md. S. O. 101, A. G.O., May 2, 1887.

Major John S. Billings, Surgeon, granted leave of absence for ten days, to take effect May 3, 1887. S. O. 98, A. G. O., April 28, 1887.

Major J. V. D. Middleton, Surgeon; Major J. C. G. Happersett, Surgeon; Capt. F. C. Ainsworth, Asst. Surgeon, appointed to assemble at U. S. Military Academy, West Point, N. Y., on June 1, to examine into the physical qualifications of the members of the graduating class and of the candidates for admission to the Academy. S. O. 102, A. G. O., May 3, 1887.

Capt. Leonard Y. Loring, Asst. Surgeon, sick leave of absence still further extended six months, on surgeon's certificate of disability. S. O. 103, A. G. O, May 4, 1887.

Capt. Victor Biart, Asst. Surgeon, sick leave of absence still further extended one year, on surgeon's certificate of disability. S. O. 99, A. G. O., April 29, 1887.

First Lieut. Chas. B. Ewing, Asst. Surgeon, ordered from Ft. Leavenworth, Kan., to Ft. Lewis, Col., for temporary duty. S. O. 100, A. G. O., April 30, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING MAY 7, 1887.

Shafer, Joseph, Asst. Surgeon, detached from the "Minnesota," and to the "Ossipee."

Simon, W. J., Surgeon, ordered to the U. S. Str. "Boston."

Henry, C. P., Asst. Surgeon, detached from hospital, Philadelphia, and to the "Boston."

Means, Victor C. B., Asst. Surgeon, detached from hospital, Mare Island, and to the hospital, New York.

Simons, Manly H., P. A. Surgeon, detached from Naval Academy, and to the "Constellation."

Diehl, Oliver, P. A. Surgeon, detached from hospital, New York, and to the hospital at Philadelphia.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE FOUR WEEKS ENDED MAY 7, 1887.

Goldsborough, C. B., Surgeon, leave of absence extended thirty days on account of sickness. April 20, 1887.

Devan, S. E., P. A. Surgeon, granted leave of absence for thirty days, to take effect when relieved. April 12, 1887.

Bratton, W. D., Asst. Surgeon, to proceed to Port Townsend, W. T., and assume temporary charge of the service. April 21, 1887.

Wyman, Walter, Surgeon, detailed as chairman, Board for physical examination of candidates for appointment as cadet, Revenue Marine Service. May 6, 1887.

Mead, F. W., P. A. Surgeon, detailed as recorder Board for physical examiuation of candidates for appointment as cadet, Revenue Marine Service. May 6, 1887.

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ORIGINAL ARTICLES.

TWO CASES OF MALIGNANT ENDOCARDITIS.

Read before the Philadelphia College of Physicians, March 2, 1887.

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Both the cases included in this report have been named malignant endocarditis, although one of them is without the warrant of a microscopical examination. The clinical course and microscopical appearances indicate such to have been its true nature, however. I venture to bring it before you thus labelled, to excite criticism, if necessary, and to ask your attention to one of the manifold phases of this interesting disease.

The case was under the observation of Dr. J. Henry Musser, of Lancaster County, and seen by my father, Dr. Benjamin Musser, in consultation. It occurred in their practice in 1878. I recall the case both from conversations and letters concerning it at the time. Unfortunately, the notes of the case in Dr. Musser's possession have been mislaid. His memory and memoranda in his case-book feebly supply the deficiency; fortunately we have the morbid specimens.

Case 1.—Rheumatism; embolism of large vessels; cardiac murmurs; gangrene; chills and fever; death. Autopsy: vegetations on mitral leaflets; emboli in brachial and femoral arteries.—H. R., male, æt. 23, laborer, consulted Dr. J. Henry Musser, June 25, on account of rheumatism. He was visited by his physician the first week in July once, the second week four times, and the third twice. On the 1st of August grave symptoms set in, and on the 3d of September he died. It will be observed, therefore, that, in July, the patient was not very ill; in fact, he continued at light work on his farm, and on the 1st of August was in the harvest field, when the first embolus manifested itself. During that month he had rheumatism, and for a short time before August 1st, chills and fever.

August 1. Sudden severe pain occurred in the right brachial artery. Could not be removed to his house at once on account of collapse. Dr. Musser saw him, and found the pulse absent at the wrist, the hand cold and cyanosed. Two days subsequently the femoral artery became plugged, much pain being occasioned at the time. The circulation in neither arm nor leg was ever restored, and gangrene ensued. Attention was at once called to the heart, and a distinct systolic murmur was heard at base and apex. During the month an irregular fever, with irregularly recurring chills, was present. Death took place from exhaustion, September 3, thirty-three days after serious symptoms set in.

At the autopsy the vessels were plugged with emboli and thrombi, as exhibited in the specimens. The heart was enlarged by dilatation, and on the posterior cusp of the mitral valve soft fungating vegetations grew. Some of the chordæ tendineæ were surrounded by vegetations. The auricular surface of one cusp was rough, and minute ulcers were present. Fibrin clung to the vegetations, and recent clots filled the cavities. The aortic valve and the right heart were normal. There was no atheroma.

Remarks.—Without doubt, in this instance, malignant endocarditis was associated with rheumatism, and the type was essentially pyæmic. One might presume, however, that the so-called primary rheumatic symptoms were pyæmic in nature, or that the cardiac lesions supervened secondarily to the gangrene. The teachings of the autopsy do not sustain either supposition. The absence of old cardiac and vascular lesions, and the general integrity of the organs, preclude the possibility of pyæmia. The normal condition of the arteries (absence of atheroma), the absence of primary blood dyscrasiæ, or of any cause, save cardiac, for the emboli, defeat the second supposition.

Case 2.—Malignant endocarditis; chills, irregular fever, sweats; cardiac murmur and pain; vomiting and diarrhœa; marked embolic phenomena; jaundice; death. Autopsy: proliferative bacterial endocarditis confined to the mitral valve; emboli of skin, mucous membrane of mouth, of stomach, and of intestines, of spleen, kidneys, peritoneum and endocardium; embolus and thrombus in left iliac vein.—M. S., female, æt. 27, white, German, married, admitted to Philadelphia Hospital August 26, 1886. At the same time her husband and children were admitted for a febrile complaint, thought to be of malarial origin. The patient had been ill about six weeks, of an irregular fever, also said to be malarial. At this time she was nursing an infant which had been born one year before. The labor was natural, and she had a good getting up. Since birth of child patient has not menstruated. Three years previous to this illness she had an attack of malarial fever, and at one time had rheumatism of the leg. She never had any other

ailment, was strong and hearty, and of temperate habits.

The family history of the patient is very good. Her parents and several brothers and sisters are living. One sister died of pneumonia; the cause of death of another is unknown. On admission it was noted that the patient was prostrated and complained of chilly sensations, she sweated profusely, and suffered from nausea. The tongue was clean and moist; the bowels loose, five movements in twenty-four hours, thin and greenish in color; the nausea had disappeared in twelve hours; tenderness of the epigastrium was observed, but none in the iliac fossæ. The spleen extended, in the axillary line, from the sixth rib to the margin of the ribs. There was no eruption. Both cheeks were flushed. The skin and mucous membranes were pale, the hands quite anæmic. She was somewhat emaciated. The mind was clear. The lungs and heart were normal; the latter rapid in action, and rather feeble. Milk diet, stimulants, and quinia ordered.

September 2. My resident, Dr. Dorland, detected a cardiac murmur two days ago, and to day the following is noted: General symptoms and appearances about the same. Apex beat of heart in fifth interspace in nipple line; impulse moderately feeble; no thrill; pulmonary second sound accentuated; high-pitched systolic murmur at apex transmitted to axilla; no murmur at aortic orifice. Pulse rapid, small, and feeble. No cough; no dyspnœa. Ulcerative endocarditis suspected.

8th. The fever has continued in spite of quinine. The patient sweats profusely throughout the day, but not at night. Her anæmic appearance is striking. She is quite cheerful, but is evidently losing flesh and strength. The diarrhœa continues. The cardiac murmur has increased in intensity during the past forty-eight hours, and can be heard loudly at the angle of both scapulæ, louder at the right. Marked tenderness on pressure, and some pain complained of in the third left intercostal space. At the base of the right lung impaired resonance, and fine, moist, crepitant râles are observed. A few râles are heard at the right apex also. Short, high-pitched, jerking inspiration and prolonged expiration is detected at the right apex, and high-pitched inspiration at the left.

12th. Two days ago two small purpuric spots were observed on each upper eyelid, and to day hæmorrhagic infarcts are seen all over the trunk and on the upper extremities, pin-head to split-pea in size, bright red, not disappearing on pressure. Hæmorrhages in the ocular and palpebral conjunctivæ of both eyes at inner and outer canthus. Rapidly losing flesh and strength. Sweats continue. Abdomen distended in epigastric and umbilical regions; large wavy impulse in epigastrium. Nausea and vomiting recurred the past five days; fluid dark, greenish tinge. The vomiting occurs in the morning. Diarrhœa continues. Spleen readily felt below the margin of the ribs, tender. Lungs have cleared up. No cerebral symptoms. Heart's action irregular. Pulse small, feeble, rapid, dicrotic. Tenderness behind the sternum. Impulse (systolic) in second, third and fourth left interspaces. In second interspace to the left of sternum very perceptible thrill. Systolic murmur not so loud as it has been at apex. Over third rib, left auricle loud, booming systole, with "grinding" murmur. In second interspace to the left of the sternum loud, rough, high-pitched murmur. Pulmonary second sound muffled. Murmur over tricuspid not so distinct as at mitral, and probably transmitted; aortic murmur low in pitch, conducted from base. No œdema. Mind clear.

13th. Physical signs as above. Cardiac dulness extends from the left edge of the sternum one inch to the left in the second interspace. It extends in the third interspace two inches, and in the fourth three inches. Apex beat in nipple line. Intensity of murmur greatest in second interspace. Chill this morning. Urine scanty and high-colored, and contains blood and epithelial tube casts in abundance, and a small amount of albumin. General symptoms the same. Extreme prostration.

14th. Chill at 7 A.M. A little more drowsy than formerly; no delirium. Murmur in second interspace not so distinct. New capillary infarcts in abundance about the neck. Vomiting and diarrhœa continue. Infarcts in lips and on end of tongue. Conjunctivæ slightly icteric. Dyspnœa severe for half an hour at 2 P.M. Partially collapsed state, with grasping and sighing; excessively rapid pulse; stimulants relieved the patient. At 11 P.M. a second attack. During the day very irritable, and latter part of day drowsy. Died at 2 A.M., September 15.

The following record indicates the daily fluctuations in temperature. The pulse record was not preserved. but from first to last it was rapid, 120 to 130 per minute.

August 25, P.M., 99.3°. 26th, A.M., 100.4°; P.M., 103.2°. 27th, A.M., 101.1°; P.M., 103.° 28th, A.M., 101.1°; P.M., 101.3°. 29th, A.M., 102.1°; P.M., 102.3°. 30th, A.M., 103°; P.M., 100.4°. 31st, A.M., 100.1°; P.M., 101°.

September 1, A.M., 102°; P.M., 101.2°. 2d, A.M., 102.1°; P.M., 102.3°. 3d, A.M., 102.4°; P.M., 99°. 4th, A.M., 99°; P.M., 101.4°. 5th, A.M., 101.2°; P.M., 105°. 6th, A.M., 99.2°; P.M., 105°. 7th, A.M., 101.1°; P.M., 97°. 8th, A.M., 97.2°; P.M., 99.3°. 9th, A.M., 101.2; P.M., 105°. 10th, A.M., 105°; P.M., 99.2° (chill at 6:30 A.M., and 9:00 A.M. temperature taken). 11th, A.M., 101.3°; P.M., 99.3°. 12th, A.M., 101.°4; P.M., 99.3° (chill 7:30). 13th, A.M., 102.3°; P.M., 102°. 14th, A.M., 100.2°; P.M., 100.4.° 15th, A.M., 99.2°.

During the course of her illness careful search was made for localized purulent inflammation. The pelvic organs were normal, the bones were evidently free from disease, and inflammation of the middle ear was not detected.

Autopsy (by Professor Osler, Dr. Musser, and Dr. Dorland).—*General Appearance.*—Medium sized body, somewhat emaciated. Skin pale, slightly icteric. Numerous petechiæ cover the face, chest, and arms; very numerous on right arm and wrist. Petechiæ range in size from a pin's head to a split-pea, and vary slightly in color from vivid red to dark

blue; one or two only present central yellowish core.

Abdomen, Thorax.—Numerous petechiæ on parietal peritoneum. Slight serous effusion in both pleural sacs; few adhesions at right base; some petechiæ in parietal pleura.

Pericardium, Heart.—Excess of pericardial fluid, numerous small petechiæ on visceral layer. Right chamber relaxed, containing fluid blood and small clot. Left ventricle, tolerably firm, dark clot. Apex of the left auricle is long, and can be seen turning round to base of pulmonary artery. Before removal of heart, fingers in pulmonary vein and pulmonary artery, both of which are free. Further dissection of heart: right auricle, little blood, staining of endocardium; a few petechiæ. Right ventricle, chamber large; tricuspid segments a little thickened; a distinct nodular thickening at angle of anterior and internal cusps. Pulmonary semilunar valve normal. Left auricle dilated. Seen from above, mitral orifice plugged by loose black clot and large greyish-white vegetations. After removal of auricle, the following conditions of valve appear: from base of posterior cusp of mitral, large irregular gray-yellow vegetations one inch in length extend into the auricle passing out at right angles to the mitral ring, and forming a sort of valve across the orifice. Entire auricular surface of this cusp covered with vegetations. Anterior cusp at free edge a large, warty vegetation projecting into ventricle three fourths of an inch. The anterior part of this cusp is free. One or two of the chordæ tendineæ are encircled with vegetations. No involvement of endocardium, other than that of valves. Aortic cusps normal. So called unprotected space below aortic ring presents deep depression, is closed, and to its base is attached a nodular thickening at angle of tricuspid cusps. Muscle substance of heart is pale, looks fatty; numerous ecchymoses Coronary arteries free.

Lungs crepitant; ecchymoses on pleura. No infarcts. Bases œdematous, somewhat congested. Pulmonary artery normal.

Spleen weighs 1 lb. 5 oz., soft, capsule closely adherent at one spot. Pulp soft, reddish-brown; four large infarcts of some age, yellowish; others recent, none suppurating.

Kidneys somewhat enlarged. Capsule free, surface irregular. Numerous recent infarcts. Unusual amount of pigment. Right kidney, same changes; not so many large infarcts; the pigmentary changes about many of these infarcts are peculiar.

Pancreas.—Few interlobular hæmorrhages.

Stomach.—Numerous ecchymoses. Many with small, central grayish spots. Mucosa about cardiac end much reddened.

Duodenum.—Bile duct pervious; in mucous membrane small, superficial ecchymoses.

Small Intestine.—One or two small infarcts in jejunum. Toward valve the ileum was much injected, and the small infarcts were numerous. *Large Intestine.*—Cæcum deeply injected; throughout the colon they are numerous, in size from two to ten millimetres. Some of larger show distinct nodular prominence, which on dissection is grayish-red, firm.

Liver.—A little enlarged. No extravasations; tissue soft and light brown. No infarcts. Weight 5 lbs. 4 oz.

Uterus.—Medium size. Os shows deep lateral laceration. Mucous membrane deeply pigmented. Muscle substance normal. Ovaries normal. Small cyst in broad ligament. Pelvic veins are normal. No trace of chronic inflammation about broad ligament. No thrombosis of veins.

Bladder.—Few ecchymoses.

In the common iliac artery a plug is seen extending into the external iliac as far as the femoral; in the internal iliac it extends for two inches. On slitting up artery the thrombus is closely adherent, and at bifurcation it has softened, and has a purulent (?) appearance. Clot in internal iliac is one and a half inches long at least. Much pigmentation about the internal coats of the artery. No evidence of any local disease. Brain, spinal cord, eyes, and ears not examined.

Microscopical examination of the fresh clot in the artery, and the vegetation on the valve, by Dr. Griffiths, revealed the micrococci common to ulcerative endocarditis, the Staphylococcus pyogenes aureus.

Sections of the organs after hardening were made for me by Dr. William Gray. He reports as follows:

Heart.—Fatty degeneration of the muscular fibre, with almost entire obliteration of the striæ; increase of the interfibrillar connective tissue, and decided increase of the nuclear elements.

Spleen.—Extensive cirrhosis; obliteration of the cellular elements by fatty degeneration and an abundance of blood crystals (section from an infarct) are seen.

Kidney.—Increase of intertubular connective tissue and tissue of Bowman's capsule. Proliferation of epithelial cells lining capsules and tubes. Cells degenerated and lumen of tubes plugged with casts. Section of infarct shows blood infiltrating into the tubules and between connective tissue fibres.

Intestine.—Increase of connective tissue in submucous layer and of adenoid tissue of villi; extensive lymphoid infiltration into mucous layer, villi, and glands of Lieberkühn. Granular degeneration of cells of villi. Infarct between and into submucous and muscular coat, blood crystals in infarct.

Artery.—Entire absence of intima, with thickening of middle coat, and infiltration of blood into media.

Unfortunately, Dr. Gray did not get any of the proliferated mass on the valves. Dr. Gray was unable to find micrococci in the sections he had cut. They were given him without proper labelling, so that he did not know the tissue he was cutting. While this is to be regretted, it is enough to learn from the early and late examinations of Dr. Griffiths, that bacteria were present. Dr. Griffiths readily found in the fresh treated preparations that micrococci abounded in the granular matter, and about the leucocytes of the vegetation.

The lesions otherwise found, were myocarditis, glomerulo-nephritis, and gastro-enteritis, with the usual histological changes about an infarct.

Remarks.—So many thoughts arise in the con-

templation of a case that represents so complete an evolution of a morbid process that one is tempted to indulge in lengthy remarks. We shall limit ourselves, however, and so be content with calling your attention to one or two prominent features.

Diagnosis.—Observe, if you please, in the first place, the perfect picture of malignant endocarditis presented by the case. There was not a moment after the manifestations of the heart lesions were studied, that the diagnosis of endocarditis was doubted. It is true that before the cardiac murmur had been detected we could only say we had to do with a septic process. Who would say otherwise in a case of a young person with irregular fever, profuse sweats, and extreme exhaustion; with vomiting and diarrhœa, and enlargement of the spleen; with an acute inflammation of the kidneys without dropsy; with the physical signs of endocardial inflammation; and with the most pronounced appearance of capillary hæmorrhages in the skin and mucous membranes, terminating in suffusion of the skin, conjunctivæ, and mucous membranes with the mild but ominous hue of icterus? It is true we considered at first whether, from the history and association with similar affections, the case was one of malarial origin. The use of quinia without result, the irregularity of the fever, the frequent pulse, the extreme sweats, and the diarrhœa, led us to abandon this idea. Typhoid fever was rightly thought of, but momentarily. The spots, the tympany, and the characteristic stools were wanting; no approach to the typhoid state was observed in spite of the high fever and rapid pulse; the peculiar features of the tongue were absent, and at no time were the faculties dull or the mind wandering. The physical signs observed in the lungs, the profuse sweats, the quick pulse, and the diarrhœa, naturally induced the question of tuberculosis to arise. The disappearance of the lung affection, the absence of hurried respiration, and of the tubercle bacilli in the discharges, were sufficient counterproofs.

Thus, by exclusion and by a careful study of the disease as it was gradually unfolded to us, we were enabled to make a diagnosis. In this, as in many instances, unfortunately, with waiting and watching, too soon the true nature of the affection was so legibly written that he who ran could read.

Class.—As far as can be ascertained, the affection was idiopathic—using the term with the modern reservation. That is, a cause cannot be ascertained for the development of the disease in this case unless the slight rheumatic attack years previously is sufficient to attach the diathesis as cause and effect.

Type.—Recall for a moment the marked symptoms present. The fever, the chills and the sweats, the clear intellect, the gastric and intestinal disturbances, clearly group the case with other examples of malignant endocarditis of the pyæmic type.

Special Symptoms.—Enough has been said of the symptoms in the history of the case. Your attention need not be called again to the vivid temperature range, the recurring chills, the grave renal symptoms, and the pronounced capillary hæmorrhages. The latter were striking—at first but a few, each day more and more appearing; confined not only to the skin but seen in the lips and the tongue and the conjunctivæ, they presented a glaring picture of the pathological process. The anæmia, which was barely noted, deserves a remark. It was profound, and the appearance due to it at once excited attention. Certainly the hæmoglobin was much reduced, yet the patient was so ill we did not care to disturb her to ascertain its percentage.

One class of phenomena deserves moré lengthy remarks—the physical signs of the cardiac lesion. At first, at the mitral orifice a systolic murmur transmitted in the usual direction was heard. It varied in loudness and pitch. Later it diminished in pitch and volume, and at the same time a very loud systolic murmur, high in pitch and grinding in character, was heard on the third left rib and in the second left interspace one and a half inches outside the sternal edge. So loud was the murmur in this situation that, especially as it was attended by a thrill, we thought the pulmonary valves were implicated in the disease. The occurrence, however, of an increased area of pulsation, most distinct in the second and third interspaces, and of an increased area of dulness in the auricular region led to the conclusion that mitral stenosis was present. A presystolic murmur was not heard, however, and probably was not present. It was not created because of the projection of the vegetation over the orifice, in all probability. For a similar anatomical reason one can infer that the ventricle fills, partially at least, prior to and independent of contraction of the auricle. For with such an effort, at once, communication would be cut of by the vegetation.

The systolic murmur was heard, in the latter weeks, loudest in the second and third interspace. Two causes can be invoked for this peculiar localization of the murmur. The projection of the mass from the auricular surface of the valve could readily throw the back flow of blood—the valve not closing from the situation of the second mass—into vibration, and thus murmur and thrill be produced and heard loudest over the auricle. While such an explanation suffices, a second cause for the murmur can be found in the position and dilatation of the auricular appendage. If such a view of the case is held, then the theory of Naunyn and Balfour to explain the mechanism of systolic murmurs in this location is well illustrated. The excessive loudness of the systolic murmur at the angle of the right scapula was very peculiar.

The case of recognition during life, and the peculiar physical signs, are the features of prominent note in this case.

FORT SILL, INDIAN TERRITORY.

BY MORSE K. TAYLOR, M.D.,

MAJOR AND SURGEON, U. S. ARMY.

The prominence given to Fort Sill as an unhealthy station by the late report of the Surgeon General, taken in connection with the comments thereon in The Journal of February 26, are such as to give a

very erroneous impression respecting the present sanitary condition of this post. That it has been in years past very unhealthy, no one familiar with its history will dispute, but that it is so now few, if any residents thereat will admit. And, as the writer has been on this station for the last three and a half years, and charged with the supervision of its hygienic affairs, he may be pardoned for feeling a little sensitive upon this question; more especially so, since under his administration the post has become one of the most healthful and pleasant stations in the West. Notwithstanding this, however, he would not write the following at this time, were it not that a lesson may be learned by a further consideration of the Surgeon-General's statistics taken in connection with others of a later date.

It may be observed that it embraces the period commencing with July 1, 1885, and ending with June 30, 1886; corresponding with the national fiscal year. In this it differs from the sanitary reports of cities and other countries. This may be noted only to invite attention to the fact that the time included by the Surgeon General's report was a part of the transition period in which the post passed from an extremely unhealthy condition to one of salubrity. How sickly it has been may be understood from the records which show that in 1876 the rate of cases per 1,000 mean strength was 3.911, and in 1877 it was 3.067.

There is nothing in the natural surroundings to make the location more unhealthy than in the best situations in the South, or elsewhere in regions of acknowledged malarial tendencies. Indeed, it may be said with truth that there are few locations as good. A hasty glance at its topography will make this apparent:

The post is situated 1,200 feet above the sea, upon an irregularly quadrilateral plateau about one-fourth of a mile in diameter, its sides corresponding in a general way to the cardinal points; and at an elevation above the surrounding lands of from fifty to sixty feet on the east, south and west; while on the north it is skirted by the bed of Medicine Bluff Creek, with a sharp declivity of seventy feet. Along this creek there is a strip of heavy timber about one-fourth of a mile in width, but beyond this, and extending in all directions for one or two miles, are open bottom lands, all of which are well drained. At a distance of a mile or so to the northwest are the foothills of the Wichita Mountains, while elsewhere beyond the bottoms are wide rolling, high, beautiful prairies. Cache Creek rises about thirty miles to the northward, and running nearly due south, passing the post to the eastward three-fourths of a mile, empties into the Red River forty-five miles away. Medicine Bluff Creek, rising in the Wichita Mountains, and taking a nearly due eastern course past the post on its northern side, discharges into the Cache within the limits of the reservation. Both are free flowing streams at ordinary stages; having dry beds, however, in many places in midsummer, in others stagnant pools, while in the rainy season they rise to the height of between fifteen and twenty feet; the Medicine Bluff becoming a turbulent mountain torrent.

From the foregoing it may be inferred that the opportunity for the successful cultivation of the Anacharis Alsinastrum, as suggested for the improvement of the health of some of the posts, is not specially encouraging here; while it also invites us to look for other causes in explanation of the large number of malarial and kindred diseases which have prevailed here since the establishment of the post in 1869.

Before entering upon the sanitary history of the station, let us consider the report briefly. From this it appears that the average length of time patients are under treatment at Sill is nine days, this being a fraction less than the average for the whole army, while there are 57 posts which exceed that number; San Diego taking the lead with 23 days, followed by Stockton, Texas, with 18 days, and Bowie, Ariz., with 17 days. In the Indian Territory Forts Supply and Reno have an average of 13 and 11 days respectively.

There is, however, another method of estimating the relative healthiness of posts better than this, or that indicated by the rate of admission. If we take the rate per 1,000 of non effectives from sickness and multiply this by the number of days they are carried on the sick reports, we get a product which gives us a better idea of severity of the disorders and the loss the Government sustains as the result. To illustrate: Fort Sill had a rate of non effectives of 58 per 1,000, which, multiplied by 9, the number of days they were under treatment, gives a total loss of time to the Government of 522 days. This method of calculation shows that there were 16 posts which exceeded Sill. The first on the list is San Diego, with a loss of 3,036 days; Stockton, 1,206; Brown, 869; Maginnis, 784; Supply, 819; Reno, 616; Columbus Barracks, 1,312; Lowell, Ariz., 624 per 1,000 mean strength, and several others, embracing Jackson Barracks, Jefferson Barracks, Ringgold, Davis, Concho, Huachuca, and Bayard.

Again, if we take the cases treated per 1,000 of mean strength, and this multiplied by the length of time under treatment, we get results differing somewhat from the foregoing, but none the less instructive. The following tabulation will make this apparent:

Posts.	Cases per 1,000 m. s.	Days under treatment.	Total loss.
Ft. Ringgold	2304	11	25.344
" Brown	2181	11	23.991
" Stockton	1121	18	20.178
" Davis	2160	10	21.600
" Schuyler	1265	18	22.770
" Reno	2004	11	22.004
" Supply	1620	13	21.060
" San Diego Bks	1000	23	23.000
" Sill	2211	9	19.899
" Willetts Point	2782	7	19.474

There are other stations that closely approach Sill in their aggregates, which are omitted.

All the foregoing relates to the condition of Fort Sill before a sufficient time had elapsed to indicate what ultimate results might be expected from the efforts being made to improve its sanitary condition. These we will now consider:

When the writer entered upon his duties as Post Surgeon the latter part of November, 1883, the com-

mand, then consisting of four companies of infantry and two troops of cavalry, was in a most demoralized condition. Of the eleven officers for duty all had been sick during the two preceding months, three others were absent on sick leave, and of the enlisted men the rate of cases per 1,000 of mean strength was 468, exclusive of injuries, for the months of September and October, according to the records. These, however, did not express the real state of the case. As there was quite a rivalry in the target practice of the respective commands, the men would take their "shakes," then their quinine, and as soon as the fever abated, their turn at the rifle grounds, without going on the sick report. From the representations of the company commanders it was evident that few men escaped. Some of the attacks were of great severity. Men would be stricken down while on parade or at guard mount and have to be assisted to their quarters. One of the more common symptoms was intense pain in the back of the neck and base of the brain. Said an officer, referring to this symptom in his own case, that it struck him almost like an electric shock, and was the most excruciating suffering that he ever endured, or could imagine one capable of enduring, and live.

At the time of the writer's assignment to this station he was made acquainted with its bad reputation and was requested to seek the cause of its unhealthiness, being assured by the department commander that every assistance should be afforded to remedy the trouble when ascertained. Entering upon his duties with this aim before him, he determined to spare no effort in the accomplishment of his purpose. Careful investigations were commenced in every direction which might afford a clue to the origin of the sickness. After examining the geology and natural environments of the post, and finding in these nothing to account for it, nor in the duties or habitations of the men, the water supply was next investigated. This came from two sources: one a shallow well situated about midway on the west side of the barrack line, which was used largely for drinking purposes by the men, and the other from a stagnant pool in Medicine Bluff Creek situated about a third of a mile from the post to the northwest. The supply from this source was obtained by driving a six-mule team and a wagon into the middle part of it, thereby stirring up all the sedimentary matters possible, and then dipping this water into the tank and delivering it to the men at the barracks and to officers in their back yards, at distances of nearly 100 feet from their dwellings; and all into open barrels unprotected from the heat of the sun, the winds, or dust. As a result, the organic matters in the water soon underwent fermentation and rendered it still more disgusting. An examination of the well water showed that it contained a large amount of chlorides, free and albumenoid ammonia, nitrites, and nitrates. Although it was situated at an elevation of 50 feet above the surrounding bottom lands and 70 feet above the creek, the water came to within 12 feet of the surface of the ground; and it was but 30 feet from the barrack buildings and 250 feet from the cavalry stables. Its water supply was clearly derived from the surface drainage of the post and contaminated in the highest degree.

The creek water was next examined. That selected for this purpose was taken from the water barrels at the hospital soon after the delivery of the water wagon, the barrels having previously been emptied. There was a large amount of sedimentary matters floating in it, and not until this had settled was the examination commenced.

The distillate of this water was most offensive, having a fæcal and urinous odor most nauseous, yet it was but an exaggeration of what had been frequently observed in the water barrels of the officers' quarters during the warm weather, after standing twenty-four hours. Under the impression that a mistake had been made, or that the water had been accidentally fouled, the water delivered the next day was distilled, but with the same results. Even the water in a moderate rise after a rain was little better. No use could be made of it in the laboratory or dispensary. The sedimentary matters were placed under the microscope, and with the revelation of too many micro organisms to be described here. The stream was running at this time, so that the water was not wholly stagnant, and represented the ordinary condition of the water supplied the post for years past. In fact, the stream had been swept by a rise of sixteen feet only a few weeks before.

Near the northeast corner of the garrison, distant about 150 yards, was a small spring from which some of the officers had obtained their drinking-water. It flowed out from the north bank of Medicine Bluff Creek fourteen feet below the surface of the bottom land and on the surface of a soft outcropping sand rock, and discharged eight gallons per minute. As a water supply it was condemned in 1877 by the Post Surgeon, and the following entry made on the post records respecting it: "This spring finds its origin in surface water which drains out of a low and somewhat marshy bottom stretching along the creek to the north. This water contains various organisms, and it is believed, if not directly productive of malarial disorders, that it favors their development in many cases who would otherwise escape." These remarks had the effect of prejudicing the officers against it, notwithstanding its physical qualities were greatly in its favor, being beautifully limpid, sweet and sparkling.

In the belief that the prejudice against it was ill-founded, the writer proceeded to make a careful analysis of it, and also to ascertain its probable geological source. The result went to show that it was one of the purest springs of water to be found in any country. That its origin was very remote, the flow being entirely unaffected by local rains or droughts, was evident.

After representing these facts to the commanding officer and urgently requesting a detail of men to examine the locality and ascertain whether the discharge could not be increased to a degree sufficient for the wants of the command, his request was finally complied with. The detail was made in March, 1884, consisting of a corporal and four men, and turned over to the writer. The work soon revealed the fact

that the water came through a bed of porphyry gravel resting on the sand rock about eighteen inches above the creek bed; and further, by lowering the outflow the discharge was increased to over 7,000 gallons per hour. On reporting the results of his efforts to the department commander, the sum of $3,500 was appropriated for introducing the water to the post. Soon after a storage basin of 7,000 gallons capacity was excavated in the rock, and a spring house of solid stone masonry, with walls four feet thick, twenty feet high, and substantially arched over, was constructed to protect the spring from the floods and drift wood of the creek, while an automatic valve was introduced in the outflow pipe to shut off the back water from the stream when it should rise above the level of that in the basin.

During that season the water was distributed by the wagons and stored at the dwellings in barrels as before; and it was not until the spring of 1885 that the water was introduced into the houses. From the time that the water supply was exclusively from this spring there was a steady improvement in the health of the post. The following comparison will make this apparent. The months of August, September, and October are taken as basis because these here, as elsewhere, are the months when malarial fevers, dysenteries, and diarrhœas most abound.

Malarial fevers, dysenteries and diarrhœas for the years of

	1883	1884	1885	1886
Rate per 1,000 m. s.	560	550	404	223

Notwithstanding this great difference in the rate per 1,000 of mean strength, the improvement has been still more apparent in the lessened severity of the attacks. Not only this, but the whole aspect of the post has been changed. The sad faces, the feeling of despondency, and the bitter curses which were hurled against it four years ago, have given place to a healthful glow, a pervading cheerfulness, and an admiration for its natural beauties, its delightful climate and its excellent sanitary condition. The bloom of nearly a thousand fruit and ornamental trees, while adding to the charms of the place, attest the interest manifested by both officers and men in its improvement. It is now one of the most desirable stations in the West, with a certainty of still further changes for its betterment when the system of drainage shall be completed, and the sewage be utilized on the gardens, so that the discomforts incident to remote stations from markets and prolonged drouths may be remedied. Moreover, it illustrates in a remarkable degree the baneful influence of impure water on public health, for the conditions of the troops, in all other respects, have been almost identical since 1882; and but little changed since the establishment of the post in 1869.

Fort Sill, I. T., April, 1887.

POISONING BY ACONITE. RECOVERY.

BY PAUL L. BRICK, M.D.,
OF LE MARS, IOWA.

Fritz Steinfahrt, a farmer, aged 28, a robust German of bilious temperament, presented himself rather unceremoniously at my office on January 13, at 3:40 P.M. A friend assisted him to stagger into the office and to throw himself upon a lounge. Mr. S. then informed me that he had taken poison and was dying. As the patient could give no information regarding the name or the quantity of the dose taken, I administered an emetic while sending an assistant to the drug store for the desired information. While the effects of the emetic (2 gr. tart. emet. and 20 gr. ipec.) kept the patient occupied, the assistant returned with the consoling news that the man had actually swallowed *seven drachms* of the tincture of aconite at 3:30 P.M., or ten minutes before entering my office. The assistant produced the vial from which the poison had been taken; it was a 2-ounce vial, then containing ℥ix of tincture of aconite. Water was heated and a quart of it administered with ℥iv fl. ext. ipecac and zinc sulph. gr. ii. Emesis followed in five minutes.

3:50. Pupils dilated, pulse full and strong, 74. I gave in each arm hypodermically, morph. sulph., ¼ gr., fl. ext. digitalis gtt. iii; *per os* whiskey and strong coffee. *Symptoms:* Burning sensation in tongue, in the throat and gullet, pressure in region of sternum, loss of sensibility. Patient could see hypodermic needle enter, but could not feel it.

4:00. Emesis; continued whiskey, digitalis and coffee; pulse became slower and smaller; patient complained of great fatigue; skin dry and cold; even the breath seemed cold.

4:15. Faradic battery stimulated circulation; pulse became stronger at once, and patient became livelier, showing influence of stimulants.

4:30. Emesis; skin dry; variable mood; felt better after vomiting.

5:00. Pulse weaker, thread like, unstable, varying from 76 to 104. A minute after I had found it at 104 an assistant found it at 82; when satisfying myself of the assistant's mistake I counted it 76; in less than five minutes it was up to 92 again.

5:30. Nervous tremors; great restlessness; throws legs about; shivers so that his teeth rattle; spasms of whole body; stretches out at full length, arms and legs rigid; feet warm; $\frac{1}{160}$ gr. strychnine hypodermically; partial loss of consciousness.

6:00. Feels better, asks to walk around, and does so without great effort; passes about three pints of clear orange-colored urine; takes freely of whiskey, coffee and digitalis.

6:30. Sleepy, but very restless. Pulse 76 to 80; almost total loss of sensibility. Gave brandy hypodermically.

7:30. Stomach rejects everything given him, whiskey, coffee, port wine, etc.; is quieted by $\frac{1}{16}$ grain cocaine.

7:45. Pulse 80 to 85; respiration 14, at times very laborious; vomited stimulants given him; pupils natural, and readily influenced by light.

8:00. Two drachms whiskey are vomited up, and cause distressing hiccough; gave cocaine and nux vomica.

8:20. Thorough emesis; hiccough disappears; patient feels better.

8:45. Pulse 72, small, compressible, thread-like; respiration 12, laborious; feels chilly, has rigors, cold, clammy sweat over the body, stupor.

9:15. Vomits freely, has profuse perspiration, drinks and retains port wine, beef tea and coffee.

9:40. Emesis; nux vomica, coffee.

10:00. Emesis; cocaine ½ gr., by mouth.

10:10. Feels easy; respiration 12, regular; pulse 106. Discontinued battery, which had been used uninterruptedly.

11:00. Emesis after ℥i beef tea and a cup of hot coffee. Brandy hypodermically, which patient feels, being first return of sensibility; skin becomes warmer, pulse stronger; perspires profusely; feels sleepy, sleeps and rests well.

1:00 A.M. Awakes, is very thirsty. P. 80, R. 17. Drinks cold water; sleeps.

2:30. Awakes, drinks cold water, has severe frontal headache and pain in region of cerebellum. Temperature 100.2°.

8:00. Feels well; has rested well for several hours; walks down stairs, urinates freely, returns and vomits without distress. Takes a dose of cocaine ($\frac{1}{50}$ gr.) and drinks some beef tea.

11:00. Has appetite; eats crackers and bologna, causing burning in stomach, which soon leaves him, after which he feels well.

REMARKS.—Emesis following so closely after taking the first emetic leads me to believe that the action of the aconite itself was the principal factor. Ten minutes after swallowing the aconite, it had affected the motor system sufficiently to seriously interfere with the patient's walking up stairs; he fell twice on the stairs, and could not rise again without assistance. When entering the office his knees gave away under him, bending forward. The sensory system was paralyzed to such an extent that he could feel neither the hypodermic needle nor the injection. The aconite was taken by mistake for whiskey, with the intention to relieve colic—and it effected a cure. Patient says that the time during which he had lost consciousness seemed like a dream to him. He suffered an undescribable agony almost instantly after swallowing the poison, which was relieved as readily by vomiting. His own story was that he would as soon die as to suffer again the agony he did before vomiting. How he got across the street to my office he does not know. The injection of brandy at 11 P.M. produced pain, the first return of sensibility; from that time I considered patient out of danger, though I watched him closely all night. On the next day the palate and throat were congested; this readily yielded to a gargle of iron and chloride of potash. On the evening of the 15th the patient was taken home in a sleigh, twelve miles, feeling well. When I saw him a few days after he told me that he never felt better in his life.

Patient took: Hypodermically, ½ gr. morphia, 6 drops ext. fl. digital., $\frac{1}{100}$ gr. strychnia, f.℥j brandy; *per os*, 2 gallons warm water, 11 pints coffee, 3 pints whiskey, 20 drops ext. fl. digital., ½ drachm ext. fl. nux vom., ½ pint port wine.

THE OPERATIVE TREATMENT OF RETROPERITONEAL CYSTS IN CONNECTION WITH MICULICZ'S METHOD OF DRAINAGE.

Remarks before the Chicago Gynæcological Society, March 18, 1887.

BY CHRISTIAN FENGER, M.D.,
OF CHICAGO, ILL.

It is not my intention to give an exhaustive review of the entire subject of retroperitoneal or parovarian cysts, but I merely wish to call attention to the subject for discussion, giving some of my own experiences, with a view of bringing out those of other Fellows of the Society. The subject is that of so-called parovarian cysts, or cysts of the broad ligament, or cysts with fimbriated epithelium, and I wish to call attention to a few facts concerning them before showing specimens.

We know that these cysts are said, in a great majority of cases, to develop from the parovarium, the rudimentary sexual remnant of the Wolffian bodies; more rarely, they are said to develop from the epoöphoron; finally, it is possible that cysts of the broad ligament may originate from hæmatomas. The canals of the parovarium being lined with fimbriated epithelium, may account for the fact that the inside of a number of these cysts is found to be lined with this form of epithelium.

Parovarian cysts are typically mono-cysts. In this respect they differ materially from proliferating cystomas or other ovarian cysts developed in or into the broad ligament. Both classes are retroperitoneal cysts, inasmuch as they are situated behind the peritoneum of the posterior wall of the abdomen, but the cysts of ovarian origin are more likely to have only a partial retroperitoneal or intra-ligamentous development; that is, part of the tumor within, part outside of the broad ligament; whilst the parovarian cysts proper are more likely to be completely surrounded by the broad ligament. From the broad ligament, and separating its two layers, they commonly develop inward to the sides of the uterus and downward toward the bottom of the small pelvis.

They are usually thin-walled, lined with fimbriated epithelium or mixed fimbriated and common cylindrical epithelium; consequently their interior surface is smooth, and they contain a thin, colorless, clear fluid of low specific gravity, with no formed elements. Between the peritoneal covering and the cyst wall there is usually a layer of loose connective tissue with but few vessels; which explains the facility with which these cysts may sometimes be separated from the broad ligament covering them, and enucleated without the use of cutting instruments, and with very little harm.

A typical cyst of this kind should have the Fallopian tube on its outside stretched out and flattened, because the cyst develops into the little mesentery of the tube. In the same way the ovary is found stretched out and flattened on the outside of the cyst near the tube. Exceptions to these common anatomical characters, however, are found. The cyst wall may be thick, may become the seat of secondary growths, such as papillæ or papillomatous

fimbriated tumors, which, having developed on the inside of the cyst, may perforate the cyst-wall, protrude on the outside, and take upon them a malignant or semi-malignant character, invade the general peritoneal cavity, giving rise to multiple metastatic papillomas.

In cases of this kind, the contents of the cyst is not a thin, clear, serous fluid, but resembles more or less the fluid of the ovarian cystomas, with numerous formed elements, viscid character, and hæmative or blood mixed with it. The connective tissue layer between the cyst and the broad ligament may not be loose and deficient in vessels, but is sometimes so tense as to make separation of the cyst here almost or entirely impossible, and it may contain numerous large vessels.

As to the symptoms: The cysts usually grow slowly, and do not cause any inconvenience unless they reach a very considerable size. They are usually not very tense. The fluctuation is very distinct and superficial. When such a mono-cyst is large, the abdomen is likely to be flat, when the patient is recumbent, as in ascites, and the percussion note is apt to change somewhat with the position of the patient, thereby sometimes making the differential diagnosis still more difficult.

The parovarian cysts are likely to burst spontaneously, but the contained fluid is so little irritative in character that peritonitic symptoms rarely follow, the thin, clear fluid being absorbed quickly and readily. On this account, these are the cysts of the abdominal cavity which best permit of puncture or aspiration, as these trifling operations are not uncommonly followed by radical cures.

In this connection I will describe a case which came under my observation in 1884. A girl 18 years of age came to me from Racine, who had a cyst extending above the umbilicus, and about the size of a uterus in the seventh month of gestation. She had been accused by her relatives of being pregnant, but knowing this was not the case, came on here. On examination I found the uterus of normal size on one side of the cyst, and in my office, with a common hypodermic syringe, I drew off and took away for examination a perfectly clear fluid, and told the patient to come down for operation. She went home to make her arrangements, and came down a month later. The cyst had entirely disappeared, without symptoms of peritonitis.

In a case like this there may, of course, be a doubt as to the correctness of the diagnosis of a parovarian cyst; but it is reasonably certain that this was the case, as one of the characteristics of this class of cysts is that rupture into the peritoneal cavity causes no peritonitis, and the fluid is absorbed without difficulty.

The method of operating on these cysts we owe to Dr. Miner, of Buffalo, N. Y., who published in 1869 his operation by enucleation.

The surface of the tumor, or, rather, the broad ligament, when exposed after the opening of the abdominal cavity, is incised down to the wall of the cyst. In the loose connective tissue layer the broad ligament is now separated from the cyst wall. By means of the finger or blunt instruments this separation can be continued, without the use of any force and without appreciable hæmorrhage, until the cyst is completely enucleated, and may be lifted out of the cavity. Evacuation of the cyst fluid after partial denudation of the wall, as a matter of course, facilitates enucleation.

In some cases of parovarian cysts, the development is to such an extent peripheral in the broad ligament that the uterine half of the latter is long enough for the formation of a pedicle. In such cases the usual operation for ovarian cysts may be performed at a sacrifice of the covering broad ligament, with tube and ovary. But such a peripheral development is not the rule, and whenever the cyst is developed down upon the uterus or into Douglas' fossa, or farther away still in the retroperitoneal space, enucleation is the only method available for its complete removal.

Difficulties during the course of enucleation arise when the connective tissue is tense and rich in vessels, necessitating dissection with the knife, and numerous ligatures. Further, if a large cyst develops deep down in Douglas' fossa, or even behind the rectum, or up into the mesenteries of the intestines, sigmoid flexure, or descending colon on the left side, or cæcum or ascending colon on the right side, we may find, in such cases, smaller or larger portions of these intestines spread over the surface of the cyst longitudinally and transversely, just the same as the Fallopian tube. It may be difficult, almost impossible, to remove the cyst wall from the intestines in such cases, and danger may arise from the fact that the intestines will not bear denudation of the muscular layers to any extent, as it easily becomes gangrenous.

The first case I met with was that of a married woman, 22 years of age, from Racine, who had a cyst which had been developing for two years. It was as large as a gravid uterus at term and contained a clear fluid. When the abdomen had been opened and the covering broad ligament had been incised down to the cyst-wall, I commenced dissection with a view to enucleation, but after working about half an hour dissecting and ligating vessels, I had advanced but very little. All that I could get out of the cyst was a piece as large as the palm of the hand. Consequently I was obliged to leave the cyst, after having united the opening into it with the abdominal wound and made use of a method of drainage of which I had intended to speak this evening, the so-called Miculicz drainage. The patient made a good recovery.

About a year ago Miculicz, of Cracow, proposed the following method of drainage, not only for retroperitoneal cysts, which can be excluded from the general peritoneal cavity, by uniting them to the abdominal wound, but also for drainage in the peritoneal cavity itself. He takes a small piece of iodoform gauze, stitches a silk thread to the centre of it, and folds it up in the form of a pouch, the silk thread being inside, that the pouch may be drawn up from the bottom by it. The pouch is now pushed down to the bottom of the cavity, and if nooks and corners

exist, it is pushed out so as to completely fill them. In the inside of the pouch is packed with iodoform gauze, as much as is necessary to completely fill up these spaces. This is the advantage claimed by Miculicz for his method of drainage as compared with the use of glass or rubber drainage. Besides the disinfectant properties of the iodoform gauze applied to the entire wall of such a cyst, Miculicz states as one of the advantages of his method that, by the capillary attraction of the gauze, everything is brought out—fluids which a glass or rubber drain could not bring out. We must remember that when we drain the peritoneal cavity with a glass drain down between the intestines or in the cavity of the cyst, we cannot always expect to get surrounding organs in so close contact with the drain as to drive the fluid out.

Further, there is this to consider: that a glass drain put down in the free peritoneal cavity has no tendency to bring out the fluid accumulated at the bottom; the intestines, filled with air, will simply swim in the fluid, and there is no pressure from without that will bring this fluid out of the glass drain, while the capillarity of the gauze is likely to help in that direction. I have had this remain in all these cases for about two weeks. As soon as the discharge ceases I commence first to pull out the loose gauze inside the sac. If a space is left after this has been pulled out I press in at that dressing a little more gauze. This is gradually removed, and the pouch itself is then pulled out by the thread gradually and finally. In all my cases it came out about the end of the second week.

The second case was similar to the first, inasmuch as there was no possibility, at least as far as my ability went, of getting the cyst out. It was a large cyst of eight years' development, in a woman fifty years of age, from Sioux City, Iowa. A prolapse of the uterus had developed during this time, and I was able to get out of the cyst, after considerable dissection, hardly more than two square inches. I used the Miculicz drain with the same result as before. The patient was operated upon October 31, 1886.

In the two above-mentioned cases enucleation was impossible, and we, with Ohlshausen, may have to class them under unfinished operations, as far as the extirpation of the cyst is concerned. But in cysts of the broad ligament, such an unfinished operation is, as a rule, followed by undisturbed and perfect recovery, and so I feel inclined rather to classify the above-named method of operating as a legitimate one for non-enucleable parovarian cysts, than to use the somewhat misleading and sinister term of incomplete operation.

The third case was a woman 50 years of age, in whom the cyst had taken three years to develop. The operation was performed February 2, 1887. The outside of the cyst looked smooth in this case because the connective tissue was so loose. It was the easiest thing imaginable to enucleate it from the retroperitoneal cavity in which it was developed. There were not two vessels to tie, and this accounts for the smoothness of the outer surface. This cyst was a typically normal one of that class, as it was covered all over with the broad ligament. The fluid was perfectly clear; no remnant of a blood clot was present.

Now, when the cyst has been enucleated, the question arises, what to do? I was afraid to leave this large retroperitoneal wound without drainage, so I used Miculicz's method, and the woman is well. It is, however, a debatable question, and in the future it is probable that in a case like this drainage will not be used. Authorities like Ohlshausen very strongly recommend, even for a cavity as large as that, not to drain at all—not even to unite the surface of the peritoneum so as to exclude the retroperitoneal wound from the general peritoneal cavity. He says that when there is no infection, no sepsis, during the operation, there will be no peritonitis, and no septicæmia afterward. He also states that he usually leaves the cavity alone after these enucleations, and that peritonitis seldom or never follows as a consequence of the operation, nor do pelvic abscesses form.

This is where the matter stands, and these are the points for discussion. I must say that I do not dare to rely so fully on entire asepsis during the operation as to leave drainage out. Undoubtedly the recovery of the patient is quicker and easier without than with drainage, as very often, in the latter case, a fistula remains which may keep open for months.

The fourth case was an old and rather anæmic patient, more than 50 years of age, but apparently 60. She was pale and emaciated, and had a large retroperitoneal cyst, located partly in the peritoneal and partly in the retroperitoneal cavity, or, in other words, of partly extra- and partly intra-ligamentous development. As a natural consequence, the enucleation was difficult, since the peritoneal cavity was at once entered. On the inside of the cyst were papillomatous masses such as are found in smaller growths, cystomas of the ovary. These, of course, always indicate malignancy. On the inside of this cyst the surface was rough, velvety from the diffuse papillomatous condition of the entire inner wall, and in some places grown out into a large papilloma, but in no place smooth.

The operation in this case was rendered more difficult, because the connective tissue surrounding the intra-ligamentous portion of the cyst was comparatively tense, and further, because it had grown up into the mesentery of the sigmoid flexure, so as to be covered by it. When the cyst was enucleated there was a portion of the sigmoid flexure that I was afraid of.

There is one other point beside the intestines which we should be careful to avoid in the extirpation of these retro peritoneal cysts; that is, the ureters. As soon as we get into the neighborhood of the large vessels in the posterior wall, we must look carefully out for the ureters and locate them by palpation, as when the ureter is adherent to the cyst it may be easily torn. Miculicz's drainage was used in this case as in the others. The first three or four days she had no untoward symptoms, but on the fourth or fifth day she commenced to vomit, and became somewhat delirious and sleepy, and died, the temperature not having exceeded 101° or 102° F. I

saw her the evening before she died, and expected, on account of the vomiting, to find peritonitis, but there were no local symptoms at all. Then I supposed it to be sepsis without peritonitis, but the autopsy showed the cause of death to be uræmia.

We found in both kidneys, from pressure of the tumor on the ureters in a state of dilatation, not exactly hydronephrosis, but dilatation and subsequent atrophy, to a sufficient degree in my opinion to account for uræmia; for we know that patients with so much degenerative disease of the kidneys of any kind as to almost reach the limit of secreting tissue, are apt to get uræmia after operation. Whether the operation or the anæsthetic is the cause, I cannot say; but it is a well known fact. After the opening of the abdominal cavity, Miculicz's drain was laid down right between the loops of intestine, and, of course, a local but aseptic peritonitis formed along the drain. You will notice on the specimen I now present the impression of the meshes of the tissue of the drain, but outside of this a perfectly clear and smooth peritoneum.

As I remarked before, the chief point for discussion is the drainage. Ohlshausen does not drain in any such cases. This may be thus explained: He says that in many cases of this kind it is impossible to finish the operation. If we accept his classification, two of my cases would be termed unfinished operations; but I am certain that with an unfinished operation and a Miculicz's drain, a radical cure may be effected just as well, perhaps, as if the cyst had been taken out. This, of course, would apply only to a thin-walled cyst of a malignant character.

MEDICAL PROGRESS.

Recent Researches in Diuretics.—To what extent the Malpighian corpuscles and the renal tubules respectively take part in the secretion of urine, is not yet accurately known, although the researches of Heidenhain, Nussbaum, and others, have added much to our knowledge. It seems likely that an investigation into the mode of action of diuretics will throw great light on the question, because a diuretic drug may act either on the Malpighian corpuscles, increasing the flow of urinary water, or on the renal tubules, increasing the amount of urinary solids, or on both structures. The great difficulty, however, in experiments on the kidney in living animals, is that of estimating how much of the effect produced by a drug is due to changes in the circulation, or in the nervous system, which has an influence on the secretory activity of the kidney, as well as on the blood-vessels. Munk has, in his recent experiments, eliminated these factors by investigating the action of diuretic drugs on an excised kidney. The organ, after excision, was nourished under a pressure of 100 to 190 millimètres of mercury, by a stream of blood and salt solution through the renal artery. The drug was added to the liquid, and its effect noted by the amount and quality of the urine, collected through a canula placed in the ureter. Before the addition of any drug, it was found that the amount of urine secreted in an hour varied from 4 to 24 cubic centimètres; that this was a true secretion, and not a simple diffusion, was shown by the fact that it contained a greater proportion of saline constituents than the circulating fluid. The addition of chloride of sodium, nitrate of sodium or potassium, caffeine, dextrose, cane-sugar, or glycerine to the circulating fluid, increased the secretion of urine three to fifteen times, the pressure remaining the same; while in the case of nitrate of potassium and of caffeine, there was an increased rapidity of flow of the circulating fluid. Diuresis of this nature and under such conditions could only result, according to Munk, from a stimulation of the secretory cells of the kidney by the drug, a conclusion which, as regards caffeine, had already been arrived at by von Schroeder. An interesting result obtained by Munk was the appearance of hippuric acid in the secretion from the kidney, when benzoate of sodium and glycocol were added to the fluid circulating through the vessels of the kidney. As is well-known, benzoic acid given to any animal appears as hippuric acid in the urine; and this result has been supposed to be due to the action of the intact blood corpuscles. But in Munk's experiment, these were absent; hence, he concludes that the transformation is probably brought about by the oxygen which is combined with the hæmoglobin.—*British Medical Journal*, Dec. 11, 1886.

Antifebrin.—Mr. J. K. Murray reports the following cases as showing the advantage of antifebrin over other antipyretics:

Case 1.—J. B., aged 3; meningitis, with a temperature ranging from 102° to 105.4° F. Three-grain doses were at first tried in the forenoon. The temperature fell from 105° to 101.4° during the first two days, but on the third evening 100.4° was registered. Five grains were then given every three hours, and the temperature fell to 99.4° after two doses, and remained thereabouts. When two doses were omitted the temperature rose again.

Case 2.—A. V., aged 2; broncho-pneumonia, with temperature from 103° to 105° F. At first three-grain doses were given every three hours, and for four days this kept the temperature below 100°. On the fifth day the temperature rose repeatedly above 102°, so five grains were given every three hours, and the temperature fell to 99.4°, and remained at that point.

Case 3.—M. L., aged 25; pyelo-nephritis. Fifteen-grain doses were used. The temperature fell to 99° within one hour and a half, and remained there for ten or twelve hours. I had the temperature taken every three hours, and whenever 101° was registered, fifteen grains were given. Quinine in ten-grain doses was tried under the same conditions. The temperature fell about 2.4°, but rose 104°, and sometimes 104.8° within six or seven hours.

Antifebrin seems much more powerful than quinine, kairin, or antipyrin. It equals antipyrin in the duration of its effects, and in this respect surpasses

quinine or kairin. It is only excelled in the quickness of its action by the external application of cold. Its effects are evident within an hour, and they last from ten to twelve hours when a full dose has been administered. When administered for a long time, the dose must be increased. It produces profuse sweating and redness of the cheeks; it diminishes the pulse-rate, and distinctly increases arterial tension. I found no depressing effects follow its administration even when full doses were given. Antipyretics belong to two great classes, namely, those which diminish tissue metabolism; and, secondly, those which increase the loss of heat. From the sweating it produces, and the rise in arterial tension, one might conclude that antifebrin belongs to the second class as well as the first one. This might explain the quickness of its action, as antipyretics of the second class act more speedily than those which diminish tissue metabolism.—*British Medical Journal*, April 23, 1887.

Conditions of Successful Production of Local Anæsthesia in Tooth Extraction.—Dr. A. Lebrun, of Brussels, and his house-surgeon M. Andries, have published the notes of twenty-nine cases in which they employed local cocaine anæsthesia for the extraction of teeth. In twenty-three cases the anæsthesia was complete, in one case partial. In the remaining five cases the procedure was unsuccessful. This is attributed by them to the difficulty of introducing the short straight needle of the ordinary hypodermic syringe in the case of the second and third molars, and also perhaps to no precautions having been taken to prevent the escape of the liquid. They point out that M. Viau, of Paris, who succeeded in producing complete anæsthesia in every one of his eighty-six cases, made use of a specially constructed syringe, with a holder by which it could be grasped firmly between the index and middle fingers, and provided with needles of various degrees of curvature; also that he surrounded the tooth with plugs of cotton-wool, and applied the finger over the puncture after the needle. Besides which he made the patient keep rinsing his mouth with cold water during the five minutes that intervened between the introduction of the cocaine and the actual operation. These precautions were not observed by MM. Lebrun and Andries. They used, however, a solution similar to that of M. Viau—viz., fifty centigrammes (seven and a half minims) of a 2 per cent. solution of carbolic acid containing five centigrammes (three-fourths of a grain) of hydrochlorate of cocaine, half of which quantity was injected into each surface of the gum. —*Lancet*, March 19, 1887.

Treatment of the Urethra after Removal of the whole Penis.—Mr. Page reports the case of man, æt. 57, the subject of phimosis, and of syphilis many years ago, who had had for twelve weeks a rapidly enlarging sore and growth on the penis, which on his admission to St. Mary's Hospital, involved the organ almost down to the root, and was obviously an epithelioma (since confirmed microscopically). He had been under the care of a legally qualified practitioner for two months, but it was not until two days before, when the ulcerated mass had attained this vast size, and the glands in the left groin were enlarged, and ulcerating, that the man had been advised to come to the Hospital. The penis was at once removed, and the scrotum having been divided through the raphé, the corpus spongiosum—rendered rigid on a staff—was dissected free from the rest of the penis, and so brought down behind the scrotum, where, ample in length, it was sutured to the skin. Reunion of the scrotum completed the operation, a drainage-tube being passed through it from above downwards, in the site, that is, of the now displaced urethra. At the same time glands were scraped away from the groin, but no dissection was made, as they seemed to dip deeply around the vessels. It was hoped that some of the enlargement might be due to inflammation alone, and this happily turned out to be the case, for much of the swelling subsided, and when, fourteen days afterwards, a solitary protruding gland had been scraped out, the wound forthwith began to heal. The scrotal wound had healed immediately, and the man had no difficulty whatever, either in retaining his water, or in passing it in a sitting posture. There is no better method than this of dealing with the urethra when, the whole penis having been amputated, the urethral orifice must of necessity be sunk and lost within the scrotum. Impressed with its value twenty years ago in a case under Professor Humphry, in Addenbrooke's Hospital, I have practised it with advantage in other instances during the past few years.—*British Medical Journal*, April 23, 1887.

The Manual Delivery of the After-Coming Head in Cases of Pelvic Deformity.—In a monograph Dr. A. Martin aims to prove the superiority of the Smellie-Veit extraction of the after-coming head over the forceps. This instrument he has had occasion to use only once in the course of an extensive practice. He tabulates thirty-eight cases in which he resorted to manual delivery in case of pelvic deformity. These thirty-eight cases concern thirty-two mothers, and in eighteen the diagonal conjugate measured between nine and ten cm., in eleven between ten and eleven cm., in three between eleven and twelve. The following were the results in previous labors: Forty were spontaneous, twenty-three required the forceps, nine version, three extraction, three perforation, two induced labor. Of the thirty-eight labors conducted by M., thirty-one children were born alive (in ten with pressure markings), seven delivered dead, six of whom had succumbed before manual delivery of the head was resorted to. In none of the living children was there any evidence that the method of delivery had been injurious, and the same remark holds true of the mothers.

These statistical data certainly speak in favor of the Smellie-Veit extraction method and are valuable in settling that vexed and constantly recurring question as to the advisability of applying the forceps to the after-coming head.—*American Journal of Obstetrics*, April, 1887.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

The Editor of this Journal would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, MAY 21, 1887.

AMERICAN MEDICAL MISSIONARY SOCIETY.

To answer a number of inquiries in the most economical and satisfactory manner, we will state that a preliminary organization of this Society was effected at a meeting of physicians and clergymen of different denominations in this city, in March, 1885, and it was legally incorporated in July following. The experience of missionaries in all uncivilized and pagan countries had made it apparent to all interested in the spread and ultimate triumph of Christianity, that the greatest obstacle in the way, was the great difficulty of gaining access to the people of those countries; and also that the most successful mode of overcoming this obstacle, was to qualify the missionaries to perform successfully all the duties belonging to practitioners of medicine and surgery. But to acquire such medical qualifications and skill by the missionary, requires not less than three years of faithful study and a corresponding expenditure of money, while but a very small proportion of the young men and women who are willing or anxious to spend their lives in endeavoring to convert the heathen to Christianity have the pecuniary resources necessary to enable them to gain the medical education desired. Hence it becomes necessary to make adequate and reliable provision for enabling such to accomplish that object, and thereby enable them to do more both in extending a knowledge of Christianity and in relieving human suffering as missionaries among the people of Asia and Africa in ten years, than they could do in thirty without the knowledge of medicine.

It was expressly for this purpose that the American Medical Missionary Society was organized, and for this purpose only has it thus far prosecuted its work. The Society is inter-denominational and evangelical in character. It is constituted of three departments: 1st, a Board of Managers having the supreme control; 2d, a Board of Honorary Directors having advisory functions; 3d, an Executive Committee composed of the officers of the Board of Managers, having the power to transact the business of the Society during the recess of said Board. It is no part of the object of this organization to establish Foreign Missions, or to send e ther physicians or ministers into the missionary fields of labor under its own superintendence, but to furnish systematic and well directed aid in furnishing a full medical education to such young men and women belonging to any of the recognized evangelical Christian denominations as can comply with the following rules:

1. Every applicant must furnish the Executive Committee satisfactory testimonials of earnest Christian character and ability for Christian work from his or her Church, Society, or Board of Missions.

2. Every applicant must be a graduate of some college, or furnish evidence of having received a fair liberal education.

3. Every applicant must pass such a physical examination as is required by our good insurance companies.

4. Every applicant must agree to take a full medical course of three years, and to graduate.

5. Every applicant must bind himself or herself, on completion of the course of medical education furnished by the Society, to go out to the foreign field as a medical missionary, or else to pay back to the Society the cost of the medical education furnished.

It will be seen that these rules exact evidence of Christian character, and both mental and physical ability for Christian missionary work; and also guard against the tendency manifested in some quarters to send, as *medical missionaries*, men and women with only very inadequate amount of medical knowledge. It is not the intention of the members of the Society to devote any part of the money that may be received to the establishment of any medical college, as the work can be more economically and efficiently done in the best class of medical colleges already established in various parts of the country. As none of the officers receive salaries, all the money contributed can be devoted directly to the work of education, except a very limited amount for stationary, printing, etc., for the Secretary and general agent.

In the brief period since its organization, the Society has received in all eight students. Three of these entered the Rush Medical College, four the Chicago Medical College, and one the Woman's Medical College, of Chicago. Three of the above graduated this Spring, after a thorough three years' course; one having served eighteen months as house

surgeon in the Cook County Hospital of this City. Two of these go, as appointed by the American Board of Foreign Missions, to Africa, to Natal East Coast, and the other to the West Coast. The one under appointment, of the Presbyterian Foreign Mission Board, to go to China, was hindered by domestic reasons, and refunded to the Society the cost of his medical education. Rev. Mr. Mapleden, of the Baptist Board, who had been in India eight years as a missionary before he commenced his medical studies under the Society, did not complete his course, but obeyed an order of the Board to proceed at once to fill an important post made vacant by the death of a former co-worker in the foreign field. This is the first student ordered to the foreign field from this Society without a diploma, matter much regretted, as the chief aim of the Society is to insure thorough medical and surgical training, so as to furnish the varous foreign missions with worthy representatives of the American medical profession. Only such as can take the time to complete the course of three years are sought.

The Secretary has received a large number of applications, from different States of the Union, from young men and woman who are highly recommended by their Denominational Societies and Boards, as most suitable persons to make effectual, and worthy representatives of our Christian Faith and our honored profession. Hence, there is reason to believe that the number will be greatly increased by the opening of the Fall term of the medical colleges of our country. The Treasurer's book shows an income of $1514.24 and an expenditure of $1138.50. Special pledges have been given by friends of the Society to educate six students. There is no stated income except personal pledges, as no legacies of thousands are yet available. It is hoped, therefore, that the agent will receive the aid needed not only from the friends of missions generally, but from members of the medical profession who should have a special interest in the work undertaken by this Society. The two young men, sons of missionaries, born in India, set out last Fall to visit the colleges and seminaries of America, and have reported 117 colleges and seminaries visited, and 1836 students who offer themselves as willing and desirous to go to the foreign field. Here are nearly 1500 young men, and at least 300 young women, many of them to be educated as medical missionaries, with little means to aid themselves; and consequently will be needing just the kind of aid that the American Medical Missionary Society desires to give. A successful Branch of the Society is formed at Minneapolis, Min., and it is the object of the parent Society to plant Branches in as many of the States of the Union as possible, and thus facilitate the work and curtail the expenses. Two or three other States are doing something on this line, yet seemingly not quite in harmony with the broad principles of this Society.

Any further information concerning the work of the Society can be obtained from the Secretary, Dr. H. Martyn Schudder, in the Argyle building, N. W. Cor. Michigan Ave. and Jackson St., Chicago, or of the present general agent, Rev. Wm. Stoudenmire, whose office is with the Secretary.

WHY DOES BERGEON'S METHOD NOT MEET WITH BETTER SUCCESS IN THIS COUNTRY?

The American physician is essentially a practitioner of medicine, a therapeutist, a healer of the sick. He is inclined to rush at every new thing in therapeutics like a bull at a red rag. This has its advantages, to be sure; but it has also its drawbacks, as is amply illustrated by the experience of the last two months with regard to M. Bergeon's method of dealing with consumption. Gas bags and wash-bottles have hardly been produced rapidly enough to supply the demand. Mineral springs throughout the country have been called upon to furnish sulphuretted hydrogen. The press has published absurdly extravagant accounts of the marvellous cures being thus effected. The wildest hopes have been entertained by the profession and laity alike, and ill judged, premature statements uttered.

Such has been the status of affairs until very recently. Now, however, there are signs of the reaction having already set in. In this city physicians are beginning to acknowledge that they are not getting the results they looked for. The treatments have produced colicky pains and in some instances diarrhœa. The fever has not always been lowered, while cough and expectoration have not ceased. In a word, Chicago physicians are coming to regard the method as overestimated. The *New York Medical Record* for May 7, 1886, contains a report of Dr. C. L. Dana's experience, wherein he states very plainly that, in his hands, the method has not produced such results as are claimed by many others. On the other hand, there is much testimony of a trustworthy kind to its remarkable efficacy in certain cases. This is particularly true of the reports still coming from France. In other words, we are driven to the conclusion that in this country this method does not achieve as encouraging results as in the land of its birth. If such

be the case, the query arises at once, to what is this due?

From a careful perusal of the literature of the subject to the present time, as well as from personal experience and conversations with many practitioners in this city who are trying the method, we are inclined to think it is not so much owing to inefficiency of the method itself, as to defects in its administration. We have used for the most part sulphur waters without knowing the percentage of sulphuretted hydrogen they contained or gave up to the stream of carbonic acid passed through them. Take, for example, the Ypsilanti water, so extensively employed in Chicago and vicinity: It is said to contain 21.0786 cubic inches of hydrosulphuric acid to the gallon. Yet it is fair to assume that, brought from the spring in barrels and bottled here, as it is, much of its free gas has escaped. So far as we can ascertain, no analysis has been made of the two gases after having passed through the wash-bottle, with a view to ascertain the proportion of the two. If we are not mistaken, M. Bergeon charges his carbonic acid with 1 per cent. of sulphuretted hydrogen. Does any physician here know exactly what percentage of the two he himself has been using?

Again, a number of the physicians here have been in the habit of filling their gas bags with several gallons of CO_2 and depending upon this supply for several treatments on successive days. This is bad, since atmospheric air enters the rubber receptacle by endosmosis, under such circumstances, and occasions colic to the patient. Moreover, the apparatus, used in this country generally, does not admit of an accurate measurement of the amount of gas injected; the argument that one can determine this by the number of times the pressure bulb is emptied, to the contrary notwithstanding.

In the light of these and other facts, best known, perhaps, to each practitioner, is it fair to M. Bergeon to content ourselves with inexact trials of his method? Would it not also, for our own sakes, be well if some of our physicians with hospital opportunities at command, were to undertake a series of careful experiments to fix definitely the dosage of the two gases, and thereby establish this treatment upon a scientific basis? If such investigations are being conducted in this country, we have not heard of them, and shall give their results hearty welcome.

For a more careful consideration of this subject we would direct especial attention to the admirable presentation of certain facts in regard to the proper use of Bergeon's method in the letter by Dr. Babcock in another department of this issue of THE JOURNAL.

PHYSICIANS' NAMES IN NEWSPAPER ADVERTISEMENTS.

In the *Chicago Times*, of May 8 and 15, appeared an advertisement of the Ypsilanti Mineral Water as a positive cure for consumption, rheumatism, catarrh, cancer and other diseases, with extracts from an article read before a recent meeting of the Chicago Medical Society on Bergeon's method of treating phthisis, and illustrated with a cut of the apparatus made by E. H. Sargent, of this city, for administering the gas. The advertisement also contained the names of several well-known physicians of this city, and in such a manner as to show that they practically endorsed all that was claimed in the absurd advertisement.

In an obscure corner of *The Times*, of May 15, was published a protest from several of the physicians against such unauthorized and outrageous use of their names by an advertisement in a daily newspaper. But, as already said, their names were again used in a similar advertisement in the same issue.

We are authorized by Drs. Robert H. Babcock, Charles Gilman Smith, Sarah Hackett Stevenson, M. R. Brown, Wm. T. Belfield, Marie J. Mergler, C. M. Fitch, and Walter M. Fitch to state that such use of their names was unauthorized, and without their knowledge or consent; an outrage both to them and to every reputable physician in Chicago; and they do not recommend the Ypsilanti water as the best source from which to obtain the sulphuretted hydrogen for Bergeon's method—and the reason for this may be more clearly seen in Dr. Babcock's letter on Bergeon's method, in this issue of THE JOURNAL. But even were the Ypsilanti water the best source, the proprietor of that water justly deserves the condemnation of all reputable physicians for his improper methods of advertising, and for his unwarranted use of the names of reputable physicians. Nor is there any reason why Mr. Sargent should advertise his apparatus in the secular press. The public cannot and should not use the apparatus, since in hands other than those of physicians great injury to the patient may result.

We are informed by an attorney that physicians whose names are thus used can most probably stop it by legal proceedings. Is it not time that something of this kind be done? Are the names of reputable physicians private property, or do they belong to any quack advertiser who thinks he can make money by using them improperly? Here is one of the most flagrant violations of common decency to members of the profession that has occurred for some time, and it is to be sincerely hoped that the physicians of

Chicago will show that such methods will be neither endorsed tacitly (by inaction) nor patiently endured. Is it not a duty to themselves and to other physicians to stop such advertisements at once and permanently?

SOCIETY PROCEEDINGS.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, March 18, 1887.

The President, Chas. Warrington Earle, M.D. in the Chair.

Dr. W. W. Jaggard presented a

PUERPERAL UTERUS, SHOWING ENDOMETRITIS PUERPERALIS.

The material was placed at his disposal through the courtesy of Drs. Pickard, Hibbard and Plummer, of the Cook County Hospital.

History.—Patient 64003, Ward 14, Swede, 24 years old. I para. Labor March 13. Vertex presentation, R. O. P.: First stage, ten hours; second stage, three hours; third stage, ten minutes; male child; wt. 6 lbs., 13 oz.; condition good. Severe post-partum hæmorrhage, after expression of placenta; intra uterine irrigation with hot water, vinegar, finally mercuric chloride, 1 : 4000: perineum sutured, vaginal douche. Chill, three hours after delivery; temperature 101.8° F.; pulse rapid and feeble. Patient died four days later; temperature reaching the maximum, 103° F. a few hours before death.

The autopsy disclosed puerperal ulcers in the vagina, diphtheritic endometritis, splenic tumor, ulcerative septic-endocarditis. The ovaries, tubes and peritoneum were not involved in the inflammatory process. The case apparently corresponded to the form, described by Buhl in 1861, as "Puerperal pyæmia without peritonitis" (metro-phlebitis). The poison had apparently gained direct access to the veins, the endometritis being only a prominent symptom.

It must not be supposed that the mortality rate from child-bed fever in the lying-in wards at the Cook County Hospital is high. About 400 women are annually delivered in that institution, and less than one-half of one per centum perish from puerperal fever. Rigid antiseptic precautions, in conformity with the Semmelweis doctrine—every case of child bed fever arises from the resorption of decomposing organic matter through some local lesion in the genital track—have been instituted and carried out with commendable intelligence, skill and zeal by the internes. The only criticism that Dr. Jaggard wished to make was upon the use of mercuric chloride for the purpose of intra-uterine irrigation.

Dr. Charles Warrington Earle: I think there is evidence accumulating at this time which shows that we are not certain that the decidua comes away completely, and in a great number of cases there is not only a considerable amount of this left, but also pieces of membrane, etc., which no one, however careful, can detect. Whenever a high temperature takes place on the eighth or ninth, or tenth day, I am in the habit of washing out the uterus, and then if the high temperature continues, to curette, and in almost every case the amount brought away astonishes everybody, particularly the attending accoucheur. Sometimes 2 or 3 drams are brought away; the temperature becomes normal in twelve hours and a speedy convalescence takes place. I would like to ask what the experience and observation of the other Fellows of the Society has been in regard to the certainty which they feel that *everything* comes away.

I am getting together a series of cases in which I will endeavor to show that where there is a high temperature that comes on as late as the tenth or eleventh day, if it does not come down after a thorough intra-uterine douche with carbolized water, curetting should be resorted to, and that it will in almost every case bring away an amount of material that none of us expect. In many of these cases the temperature goes down at once.

I had a case on Hoyne street, which took place in the practice of a graduate of one of our schools, a young man of excellent record, and one who is thoroughly in accord with us on antiseptic obstetrics. On the tenth day the temperature was 103½° F.; an intra-uterine douche did not bring it down. The next day it was 105½° F. I curetted and brought away a mass of material which surprised me as well as the practitioner. The woman made an excellent recovery without a bad symptom.

Dr. A. Reeves Jackson: It seems, to look at this specimen, that the curettement would have to be exceedingly deep; especially after the infection of the walls, you could hardly get away all the septic influence. There may have been a stage in the history of that case in which it would have been a proper treatment.

Dr. Christian Fenger: In consultation last fall, I saw a case of abortion, not childbirth, where part of the placenta was left. The temperature had been down for over a week and the woman was apparently perfectly well. The doctor in charge decided to curette that part of the placenta which remained. The curettement was immediately followed by sepsis that terminated fatally within a short time. So it seems that under certain circumstances curettement may open up sepsis. He curetted to remove the placenta.

Dr. Jaggard said he supposed Dr. Earle referred to Carl Braun's practice of curettement. He did not care to discuss that subject at this meeting. Certainly, in the case presented curettement could have accomplished nothing. The poison—ptomaine, cadaveric poison or whatever it was—had already entered the veins.

Dr. A. Reeves Jackson read a report of

A CASE OF REMOVAL OF THE OVARIES AND TUBES FOR FIBRO-MYOMA OF THE UTERUS.

I present to the Society a pair of ovaries and cor-

responding tubes, which were removed for the purpose of a possible beneficial influence on the hæmorrhage caused by bleeding myoma of the uterus. The woman was single, about 40 years of age, menstruated first at the age of 13, and was always regular until three years ago, when menorrhagia occurred. At the same time there appeared at intermenstrual periods—about half way between—occasional discharges of a yellowish thin fluid. These discharges were preceded by pain in the left iliac region and some swelling. The menorrhagia increased, the other discharges continued about the same, and bleeding became so nearly constant that finally it was difficult to distinguish the menstrual period. About a year and a half before I saw her, there had been discovered a tumor in the abdomen. Ergot was then used systematically and properly, but it had no restraining influence on the hæmorrhage and she became anemic, exhausted, and had nervous headaches, cardiac palpitation and loss of appetite. I found a uterine fibroid the size of an orange and suggested removal of the ovaries, although she came for the purpose of having the uterus removed. The operation was performed at the Presbyterian Hospital three weeks ago. The left ovary was exceedingly small with no trace of recent ovulation; the tube was enlarged and contained a small amount of yellowish fluid. Possibly this condition of the tube with the previous history of occasional swelling may have indicated that the latter was from hydrosalpinx. Here are the specimens. The right ovary was enlarged and the tube normal in structure. There was a Graafian follicle which had just broken. She had menstruation two weeks before, and the condition of this follicle seemed to indicate that it had no temporal relation to that menstrual period. The highest temperature was 100.1° F., and was reached on the fourth day. The woman is now entirely well, is sitting up, and will probably be able to go to her home, a hundred or two miles distant, in the coming week. Hæmorrhage appeared on the third day after operation and lasted thirty-six hours. It was then checked by vaginal tampons. She has had no discharge of blood since that time. What effect the operation will ultimately have upon hæmorrhage and growth of the tumor cannot be determined at this stage of the history.

Dr. Christian Fenger made some remarks on

THE OPERATIVE TREATMENT OF RETRO-PERITONEAL CYSTS IN CONNECTION WITH MICULICZ'S METHOD OF DRAINAGE.

(See page 568).

Dr. A. Reeves Jackson: If I remember correctly, Dr. Miner's discovery or suggestion in regard to enucleating tumors was not originally for the purpose of removing only sub-peritoneal cysts, but to make possible the removal of ovarian and other tumors, in which the adhesions were so extensive as to make it impossible to remove them in any other way. I think his first case one in which he failed to find a pedicle and so was driven to enucleate. I think he removed very few tumors in this way, because he did not find the necessity for doing it. But when adhesions were so extensive and tense that it was impossible to remove the growth, he made a slight incision around its lower portion, and then, seizing it above, after emptying the cyst, he passed a finger or suitable instrument around until he had loosened all the attachments. It was a valuable suggestion, and operators have availed themselves of it in suitable cases.

In regard to the removal of these sub-peritoneal cysts, one of the cases related by Dr. Fenger shows clearly that the operation of enucleation is not always necessary. The tapping was followed by complete cure. Tapping has frequently been successful and these are the cases in which it is the proper method of treatment. I am aware that many hold a different opinion and advise extirpation always. If the tumor should refill after tapping and the patient's health fail, I should be in favor of removing the cyst by ordinary methods.

In regard to Miculicz's plan of drainage, it has always seemed to me that it could only succeed in removing the thinner parts of the fluid; the more dense constituents could not be carried away as well by this method as by a tube of glass or rubber. I can see an objection to it in the possibility of a long convalescence resulting from the large fistulous opening which might be left, and which would be embarrassing for months. In the last case detailed by Dr. Fenger, we have an illustration of the importance of knowing the condition of the kidneys before operating for any abdominal tumor of long standing. Many operators make it a point to know that the patient passes a sufficient quantity of urine of a proper character before consenting to operate. They insist on knowing that the kidneys can do their work, and the rule is a good one.

Dr. Christian Fenger: In regard to the remarks of Dr. Jackson, about the insufficiency of the Miculicz's drain, I will say that I forgot to state that I do not use it now, without at the same time inserting in the centre of it a glass or rubber drain. In an operation last Autumn, in which I used the Miculicz drain without a glass drain, I found the outside dressing dry and still about a pint of fluid at the bottom of the abdominal cavity after the patient was dead; so since that time I have always inserted a glass or rubber drain in the centre of the Miculicz drain.

As to the remark regarding the examination of urine: Of course we always do this. In this case there was no albumen, but I cannot say that it was examined as to quantity.

In reply to the question of Dr. Jaggard as to whether I have used the drain in pelvic abscess and acute suppurative peritonitis: I have not used it in pelvic abscess, but have used it in tuberculous peritonitis, in a case last fall which looked like a tumor; there was tuberculous peritonitis with a large localized cavity or space filled with a fluid more or less serous. I used the Miculicz drain with a glass drain, and the patient was still alive two or three months ago, and I do not know whether the drain is out yet. I have used it in other cases which show its efficiency. In a case of chylous ascites that had been tapped

and tapped and had refilled, and in which laparotomy had been performed the year before and still it had filled again, I opened and drained the peritoneal cavity, and used the Miculicz drain with a glass tube, with perfect success. I always use it in acute peritonitis, and see no reason why it should not be used in peritonitis as well as in other cases. At the time Mikulicz published his paper on this form of drainage, it was only in peritonitis that he had used it.

In regard to the similarity between labor and operation, as far as the question of eclampsia is concerned: That is one of the subjects which was brought up for discussion in the *Berliner Klinische Medicinische Gesellschaft* last fall, between Leyden and Virchow, in which no definite conclusion was reached.

I fully agree with Dr. Etheridge that vaginal drainage, mechanical of course, is the most rational method because it draws best. My own experience is limited as have only employed it twice, and both patients died. We dread the vagina as a septic cavity and the reason why we should not drain through it, is fear of sepsis from the vagina up into the abdominal cavity. But I believe with our new precautions, the vagina could be kept so aseptic that retrograde sepsis from it could be prevented, I believe also that vaginal drainage ought to be used more than it is, and we need not be so afraid of it as we are.

SUFFOLK DISTRICT MEDICAL SOCIETY.

Section for Clinical Medicine, Pathology and Hygiene.

Stated Meeting, March 9, 1887.

Dr. F. I. Knight, Chairman.

Albert N. Blodgett, M.D., Secretary.

Drs. E. W. Cushing and Morton Prince read a paper on

A CASE OF CHRONIC ARSENICAL POISONING OF SUPPOSED CRIMINAL NATURE, WITH ESPECIAL REFERENCE TO THE MEDICO-LEGAL ASPECT.

Dr. Cushing stated that the circumstances of the patient made the case specially interesting, from the evident motive which could be traced. The patient was a young man, supposed to be in possession of property to the extent of about four million dollars, and was alone in Boston. He was found at the house of a friend of his, not of his family, on Beacon street, and this "friend," with the assistance of his wife, took the sole direction of the nursing of the sick man. The medical treatment was in the hands of a so-called physician, really an apothecary and chemist. A large amount of the patient's money had been invested in the manufacture of a patent medicine, in which the "friend" at whose house the patient was staying was also interested. He said that it might be useful to members of the medical profession to know how difficult it is to bring a case before the courts, even when the evidence is apparently plain and convincing.

Prof. E. S. Wood stated that he was in a position to add somewhat to the report of the case, in the presentation of some of the results of the quantitative analysis of the vomitus and the excretions from this patient. The quantitative analysis was made, in this case, only for the personal satisfaction of Professor Wood, as the case had not advanced sufficiently far in the way of a prosecution to call for the analysis in behalf of the courts. A complete analysis is not usually made at so early a stage in the investigation of similar cases. The vomitus, which was placed in his hands on May 1st, contained one-fourth of a grain of arsenic. That of May 8th contained one-third of a grain. The urine of May 1st and 2d contained 5.4 mg. It was thought that this amount of arsenic might have been contained, as an impurity, in the medicines prescribed by the person attending the patient. These were examined, and were found to be free from arsenic. The intermediate urine, until June 1st, was not examined, but that passed on June 1st was examined, and was found to be free from arsenic. The date when the arsenic disappeared from the urine is, therefore, not yet definitely known. The only other case in which analysis was carried out in this way was that of a patient who, by mistake, took, during a considerable period, a poisonous dose of Fowler's solution, and the symptoms of arsenical poisoning were rapidly induced. In this case, analysis at the end of six and one-half weeks showed arsenic, but the urine, when examined at the end of seven and one-half weeks, did not contain arsenic. The occurrence of paralysis is not confined to chronic forms of arsenical poisoning, but may follow acute poisoning from this cause. Seligmueller quotes several such cases.

Dr. Prince said that he had made, by request, an examination of the nerves and muscles in this case. At that time the patient was almost completely paralyzed from head to foot, only a few movements being left, and these difficult and painful. Even moving the limbs passively caused great pain. There was more or less complete loss of sense of touch over all four extremities. Sense of pain was increased over some parts, but perception of it was retarded three seconds by the watch. Perception of Faradic current also diminished. Loss of Faradic excitability of all muscles of legs, forearms and hands. Triceps of right arm respond feebly, but biceps of both well. Faradic excitability of ulna and median nerves of both sides lost, also of nerves of legs. To the galvanic current there was a most exquisitely developed reaction of degeneration in all the muscles of the right forearm and hand (including loss of reaction in nerves). The same was found true of the extensors of the left forearm. The examination was not continued further on account of pain caused the patient by movement of the limbs. The same condition of affairs probably existed in all the paralyzed muscles.

The interest in this case, as indicated by the title of the paper, centred in the question of the nature of the paralysis, and the other allied symptoms. Were they due to arsenic or to alcohol? In the first place there is no question but that arsenic was given to the

man, and that, too, in poisonous doses. But on the other hand, the man was a hard drinker, was in the habit of going on constant sprees, lasting many days at a time, and had just been on a hard spree when the attempt was made on his life. Now the *paralytic* picture presented was just that of alcoholic paralysis in its most severe form. Alcoholic paralysis has only recently been thoroughly studied and understood; in fact, the best observations have been made during the last two years, and since the above case occurred. The *clinical* picture is just such a one, in almost every detail, as that which we are discussing. There is the extreme and general paralysis, the loss of sensation with hyperæsthesia, the pain and the atrophy with the reactions of degeneration. The resemblance can even be extended to the mental condition. According to Dreschfeldt[1] and Buzzard[2] there is a peculiar and characteristic delirium observed in alcoholic paralysis. A similar mental condition was present in their case.

On the other hand, the clinical picture is also like that observed in many of the cases reported of arsenical poisoning. In the severe cases there seems to have always been present the main and salient symptoms, namely, paralysis with atrophy and reaction of degeneration, loss of sensation, pain, and hyperæsthesia. Clinically and ætiologically, then, it must have been difficult, especially as a medico-legal question, to eliminate either the arsenic or the alcohol as a factor in causing the paralysis and allied symptoms.

Pathologically considered, the difficulty is as great. The pathological condition present in alcoholic paralysis is generally admitted to be a peripheral multiple neuritis. The cord is not diseased. Our knowledge, on the other hand, of the pathological condition present in arsenical paralysis is very imperfect. About the only information we have is derived from the experiments of Popow,[3] of St. Petersburg, on rabbits. According to these experiments, in acute cases, when death ensued in the course of a few hours or at the end of from three to six days, the effect of arsenic is limited to the anterior gray matter of the spinal cord. There is found a poliomyelitis. The white matter and the peripheral nerves are unaffected. In chronic cases, wherein death ensues in the course of three months, the inflammation is more diffuse, affecting the white as well as the gray matter, especially the postero lateral columns. The spinal nerves were entirely unaffected even in these cases.

Freyssig, on the other hand, claims that he has found all these changes in the spinal cord of healthy rabbits, while in six rabbits which had been poisoned by arsenic he found no pathological changes whatever in the cord. Dana, in the January number of *Brain*, states that according to Pistorius, the nervous system of rabbits and guinea pigs is very sensitive to arsenic, while that of cats and dogs is less so. Jaeschke, too, found only a few small hæmorrhages in the spinal meninges[4] of a dog which developed paralytic symptoms after a fatal dose of arsenic. Very little can consequently be inferred from experiments on animals, and we do not find that any examinations have been made on man after death to determine this point.

As has been said, the symptoms are very similar to those from alcoholic paralysis, which is known to be due to multiple neuritis. On the other hand, a diffuse inflammation of the cord would also explain the symptoms. It may be, as is most probable, that both core and nerves are affected in severe cases. At any rate, if the case we are discussing had ended fatally, and had come before a jury, whatever anyone's individual opinion might have been, it would have been very difficult to convince the jury that, notwithstanding the known ingestion of arsenic, a certain portion of the victim's condition was not due to alcohol, and even that this might not have been the exciting cause of his death. There is reason to believe that there were experts ready to take the stand and testify to this opinion. This complication is likely to arise again in other cases. A decision under such circumstances can only be arrived at by extending our knowledge of the action of arsenic on the spinal cord. It is to be hoped that pathologists and medical examiners in the future will at the first opportunity make investigation into this matter and thus increase our knowledge.

In reply to a question by Dr. P. C. Knapp as to the condition of the mental faculties, and the location of the paralysis in the patient, Dr. Cushing said that the mental condition of the patient was unimpaired, and his faculties were clear. He could remember the main events in his past life, confessed to the abuse of alcohol, remembered the jelly which had caused the relapse in his illness, and could state who had given him that delicacy. For a time he was kept in a house of ill fame on Hudson street, and from this quiet retreat he said that he was brought, on several occasions, to the residence of his "friend," on Beacon street, to dine, and was then afterward restored to the caresses of his entertainer at the before-mentioned brothel.

Dr. Bowditch asked if it were possible that the arsenic could have been absorbed into the system of the patient from the papers on the walls of the house in which he was stopping.

Professor Wood stated that the papers were examined and were found to contain no arsenic. The amounts obtained from the vomitus and from the urine of the patient were much greater than would be obtained from chronic poisoning by absorption from the wall-papers, the quantity ranging from one-fourth to one-third of a grain on the different occasions when the examinations were made, thus showing that the arsenic must have been administered at varying times, and in relatively large amounts.

Dr. Bowditch asked what is the process by which the attention of the grand jury is attracted to a case of criminal nature, and how a physician should proceed in a case in which there is reason to suspect a

[1] Further Observations on Alcoholic Paralysis. Brain, Jan., 1886.
[2] On Some Forms of Paralysis from Peripheral Neuritis.
[3] Ueber die Veränderungen im Rückenmarke nach Vergiftung mit Arsen und Blei. St. Petersburger med. Wochenschrift, 1881, No. 36.
[4] Virchow's Archiv, Bd. 102, 1885.

criminal attempt upon the health or life of another?

PROFESSOR WOOD stated that criminal proceedings are instituted by calling the attention of the district attorney to the facts in the case, which are then carefully considered by him; and if the evidence, as presented, seems to him sufficient to secure the conviction of the person complained of, the case is submitted to the grand jury. All the experts in the case are called, and after the deliberations of the grand jury, the district attorney is at liberty to prosecute the case, if, in his judgment, it is advisable to do so. The objection to commencing proceedings of a criminal nature upon insufficient evidence is that the case first goes before what is called the petit jury, and if there should not be sufficient evidence to hold the person accused at that time, the case is at once dismissed, and cannot be again called up, as a man cannot be tried twice upon the same charge. It is, therefore, considered wiser to delay proceedings in a doubtful case, in the hope that additional evidence may be procured, which can then be used in the trial, which may be commenced at any time after the commission of the deed. This way seems better than to summarily dispose of every case by the form of a trial by jury, which would effectually prevent the admission of any new evidence after the prisoner had once been acquitted.

DR. C. P. PUTNAM presented the notes of

A CASE OF HODGKINS' DISEASE

recently under his care. The patient was about 30 years old; lawyer. He was unusually muscular, and could paddle a canoe for twenty miles without difficulty. He had had no illnesses of any importance hitherto, except eczema, from which he had suffered throughout his whole childhood, and which had been finally cured at Hebra's Hospital, in Vienna. The only remains were an irritability of the scalp and face, and he was very little disturbed by this. He first came on January 11, 1886, with one enlarged gland under the occiput, and one under the left jaw. These he had noticed about the first of January; at any rate, he was sure that, on Christmas day, he was perfectly well. Iodine was applied to these enlarged glands, and in a week they were smaller. But meanwhile, others had appeared in the same neighborhood, which, in their turn, were treated with tincture of iodine. Ten days later he returned, with the second set of glands also smaller, but with a larger crop in various places in the neck, and also in front of the ear. Then it was found that the axillary and inguinal glands were enlarged and hard. Iodide of potassium had been given, five grains, increasing to ten, three times a day. During the next two weeks he was very much better, and considered that he was getting well. All the glands diminished in size. Meanwhile, however, the whole neck had been growing gradually, but perceptibly larger, so that his collar could not be buttoned. About the middle of February this apparent improvement ceased. The glands began to enlarge again, and the skin became more red and tender. This time, a slight enlargement of the spleen and liver, and general fulness of the abdomen, was found. Arsenic was substituted for iodide of potassium, and with apparent good effect. He again seemed to improve, and was satisfied with his condition; voice husky. In March, however, he complained of want of appetite, and difficulty of retaining food; had to keep a pail near him, as he would vomit suddenly and violently. Was weak; lay on the lounge much of the time; ceased to take an interest in books, although he was an active and intelligent reader. Up to this time the pulse had been normal or slightly accelerated, and there was no rise of temperature. The vomiting was supposed, by the patient, to be caused by the arsenic, which was omitted, given again, and again omitted.

About March 18th he began to lose strength rapidly; lay on the lounge all day too ill to talk, taking little food and vomiting frequently, and yet feeling hungry from time to time. Became less inclined to get up, and from about the 20th kept his bed. His mind became less and less interested in his surroundings and occasionally it would wander. On one occasion he had a hæmorrhage from the bowels which was, however, easily stopped. During this period the action of the heart became more rapid, varying from 100 to 120. Respiration was superficial but labored. He died on the 29th, one month and eighteen days after I first saw him, and almost exactly three months from the time when he noticed the first symptoms. Autopsy by Dr. Gannett.

DR. GANNETT described the appearances found at the autopsy, made March 29, 1886. The front and lateral regions of the neck were occupied by numerous packets of gray, rounded nodules, varying in size from a filbert meat to a walnut; showing on section a homogeneous, and a somewhat translucent appearance, like that of a lymph gland. Similar nodules were found in the mediastinum and about the roots of the bronchi. The spleen was much enlarged, and contained numerous secondary nodules of lymph-sarcoma. The kidneys and liver showed the presence of very numerous secondary nodules. In the mucosa of the stomach and intestine were numerous, elevated nodules, varying in diameter from one or two centimeters, with depressed centres. Microscopically these showed the structure of a lymphoma.

Dr. Gannett stated that when he made the autopsy he was so struck with the similarity of the course of this case to the acute infectious diseases, the severe symptoms having lasted only three weeks, that he placed at once portions of the new growth in alcohol for examination for micro-organisms. Thin sections, made after hardening, of the gastric and intestinal nodules, stained with methyl-blue and examined with a Zeiss 1-12, showed the presence of well-marked micrococci, in colonies, in the new growing tissue, and no other micro organisms. Of course, such a result does not prove that the micrococci found were the specific cause of the disease; since to prove this, isolation, pure cultivation and successful innoculation experiments are necessary; but it may serve as a finger point to call attention to the possibility of lympho sarcoma being an infective disease, and to suggest the advisability of further investigation in regard to this point.

Dr. T. A. DeBlois exhibited a

NEW FORM OF PHYSICIAN'S HANDBAG,

which he had recently had made. It consists of an ordinary leather bag, of medium size, but is about one-third deeper than the ordinary bags. At one end of the bag is an opening near the bottom, which can be closed by a flap which buckles tightly. This opening displays the end of an air-condenser, with two cocks, and a pressure-gauge. In the bag can be carried a small pump, by which the air can be forced into the condenser. In the space of two minutes Dr. DeBlois was able to obtain a pressure of thirty five pounds to the inch without great exertion. The apparatus is then ready for use as a spray for the throat, the use of the Evans' inhaler, or for any other purpose to which this treatment is applicable. The bag is sufficiently capacious to accommodate all the articles usually required. The weight is not materially increased by the addition of the condenser, and the whole apparatus is not too heavy to be easily taken in the hand when walking. It is manufactured by Messrs. Codman & Shurtleff.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Cæsarean Section—Craniotomy—Laparo-Elytrotomy.

At a recent meeting of the New York County Medical Association Dr. Lusk reported a case of Cæsarean section, operated on by Sänger's method. The case shows the importance of operating early in labor, of proceeding with deliberation, and of using strict antisepsis, as well as the advantages of constricting the uterus with a rubber ligature to prevent hæmorrhage during the incision of the uterus, extraction of the child, and suturing of the uterine wound. The patient was 24 years old, a native of Ireland. On March 21 she was admitted to Dr. Lusk's service at Bellevue Hospital, on account of deformity of the pelvis resulting from hip disease when a child. When 11 years old she was treated for this at a Dublin hospital, and discharged cured; but during her pregnancy she noticed some suppurative discharge from the old sinus which had formed at this time. Dr. Lusk made an examination on March 22, and to his surprise he found that labor was already commencing. The pubis was a Nægle oblique, and its diameters much contracted. After consultation with Dr. Isaac E. Taylor and Dr. H. J. Garrigues, he decided to perform Cæsarean section. With the pubic diameters in this case he thought the danger from craniotomy would be actually greater than that from Cæsarean section, provided the latter were performed early enough. As the patient was already in labor, he determined to operate at once. Both the private pavilions at Bellevue being occupied, the operation was done in one of the hospital wards.

The abdominal cavity having been opened by a median incision, the uterus was turned back over the abdomen, as were also the intestines, which were held out of the way by means of towels. A rubber tube was then placed around the uterus, and an incision two inches long made in its lower segment; the opening was afterwards increased to five inches by means of scissors. Owing to the pressure of the elastic ligature, the incision was almost entirely bloodless. The child was found with the head presenting in the L. O. A., and when extracted was in a cyanotic condition from the pressure exerted by the constricting rubber; but it was successfully resuscitated. The placenta and membranes were then readily detached by the finger from the uterine walls. In closing the wound thirty-four carbolized silk sutures were used, sixteen deep, eighteen superficial. In the deep sutures the mucous membrane of the uterus was avoided. When the rubber band was removed blood slowly returned to the pallid organ, which first became of a delicate rosy hue, and finally of a deep purple. A slight oozing was then observed at one point, and after it had ceased the uterus was returned to the abdominal cavity; a drainage-tube being inserted behind it. Silver wire sutures were put into the abdominal wound, and the patient was in excellent condition at the end of the operation, which lasted 1.15 hour.

For 3 days the temperature never rose as high as 100°; then there was a little tympanites, and it went up above 101°, but a Seidlitz powder had the effect of promptly reducing it. On the 5th day the drainage-tube was removed. Immediately after the operation the discharge from it was stained with blood, but it soon became colorless. Dr. Lusk thought that the tube was not really needed in this case at all; but at the same time there was a certain feeling of security in having it. On the 6th day there was some oozing from the orifice left by it. At the end of a week the abdominal suture was removed, and at this time the temperature would usually go up to about 100.5° in the evening, falling again by morning. On the 9th day some fluctuation was discovered at one point in the line of the abdominal wound, and a little pus was evacuated; after which the temperature became nearly normal. At the end of two weeks, however, the temperature suddenly rose to nearly 103°. No trouble whatever could be detected about the abdomen, and as the patient complained of pain in the region of the right hip, an examination revealed an accumulation of pus in the site of the old sinuses. After that time the patient continued in excellent condition, and the child was in equally good condition.

In the discussion on Dr. Lusk's case Dr. Sylva, late House Surgeon in Bellevue Hospital, who had had charge of it, said that altogether the patient did better than any other case of laparotomy that he had the opportunity of observing during his service at the hospital. As regards the result of Cæsarean section when the operation was unduly delayed, he referred to the nineteen cases in dwarfs which Dr. Robert Harris, of Philadelphia, quoted in tabulating one hundred operations in 1878, and in which only one mother and five children were saved. In all these cases the operation was only undertaken as a last resort, when the patient was utterly exhausted; and the results afforded ample proof of the importance and desirability of early surgical interference.

In reply to whether it would not have been better in such a case to perform Porro's or Tait's operation, in order to prevent the woman's becoming pregnant again, Dr. Lusk said that statistics showed that with the Sänger operation (more or less modified from the original procedure) there are over 70 per cent. of recoveries, but only 40 per cent. in Porro's operation. In regard to Tait's operation, the additional risk to which it subjected the patient was by no means advisable; the extremely vascular condition of the parts constituting a serious objection to its performance.

Dr. C. S. Wood said that in the course of his experience he had had to perform craniotomy three times, and he thought that this class of cases was as disagreeable and repulsive as one could by any chance meet with. If, therefore, by this operation it was possible to save more mothers than by craniotomy, it would be a great boon. Unfortunately, however, statistics showed thus far it had saved a much smaller proportion of mothers. In two of the cases of craniotomy that he had met with the mothers recovered, while in the third the result was fatal. Yet in one of the successful cases he labored under great disadvantages from the fact that, not expecting to be called upon to perform craniotomy, he was unprovided with the proper instruments, and was so situated that none could be obtained on short notice. Under these circumstances he resorted to the device of manufacturing such rough instruments as he could from some shoemaker's tools; and he thought the case was of interest as showing what sometimes might be accomplished by very simple means in an emergency. He said he was one of those who believed that the mother should always be saved at all hazards, whether the child was sacrificed or not; and as long as it could be shown that more mothers' lives were lost by the Cæsarean section than by craniotomy, he thought the latter should be given the preference.

Dr. Lusk said that in the old Cæsarean section, the mortality was without doubt very large. In most of the cases it was resorted to only when the woman was in a dying condition, and after all other methods of delivery, craniotomy included, had been tried in vain. When it was remembered, too, that a rough and careless way of operating had also been the rule, it was hardly to be wondered at that the patients died, and that such cases militated strongly against the value of the procedure. But, even under all these adverse circumstances, a few cases had recovered. At the present time it is getting to be understood that the operation should be performed, whenever this was possible, under more favorable conditions, and in the same careful way as any other surgical procedure involving the abdominal cavity. The operator should take sufficient time to make out the pelvic diameters, and consider fully the risks to be encountered in performing craniotomy. If, having done this, he decided that the Cæsarean section offered the best chance of success, he should make his preparations as deliberately as possible and perform the operation by strict antiseptic methods. In this way the results are infinitely more satisfactory than in the old operation, as shown by the cases of Leopold, who has operated ten times, with only one death, and who states that, in the light of his later experiences, he believes that he could now have saved this case also. Very few obstetric surgeons, certainly, could show a result of 90 per cent. of recoveries in their cases of craniotomy. Within the last eighteen months Harris has collected 40 cases of Cæsarean section, with 73 per cent. of recoveries; while the best results of craniotomy in these difficult cases show only 60 per cent. of recoveries. Other operators than Leopold have reported 5 or 6 consecutive cases without a death. One great reason of the gratifying success of the modern operation is the use of the rubber ligature, which, by effectually preventing hæmorrhage from the severed uterine structures, enables the surgeon to remove the contents of the uterus in a very deliberate and careful manner, and to bring the edges of the wound together with the greatest accuracy.

In reply to a question from Dr. Gouley, in regard to his opinion of the operation of laparo-elytrotomy in these cases, Dr. Lusk said that this procedure was particularly adapted to a special class of cases, viz.: when the head was arrested at the brim and the cervix was already dilated, or in a dilatable condition. If, however, we were obliged to pass the forceps through an undilated cervix, it was a very serious operation. In case, therefore, we desired to operate early, we have to do it at a time when the conditions favorable to laparo-elytrotomy do not exist. Of the 12 cases of this operation which have been reported, 6 recovered, and 6 died; the latter being cases in which success was impossible from the existing conditions. P. B. P.

BERGEON'S METHOD OF TREATING PHTHISIS.

Dear Sir:—My object in addressing you is not to present the results of personal experience with M. Bergeon's method of treating phthisis, nor to make original suggestions for its improvement. I desire only to state a few points concerning the preparation and amount of carbonic acid to be injected, as well as the proportion of, and best mode of obtaining the sulphuretted hydrogen. These have been gleaned from *Les Nouveau Remèdes*, November 24, 1886.

But before considering them, I should like to mention the points wherein, as it seems to me, we American physicians have been at fault. The attention of the profession in Chicago was first directed to Bergeon's method by Dr Henry Bennet's paper in the *British Medical Journal*, December 6, 1886, and our apparatus has been constructed after that of M. Morel which Bennet described. We have prepared our gas in the way he suggested, and, not being able to obtain Eau Bonnes, we did the next best thing, employed native sulphur waters, chiefly that from Ypsilanti. Or, if not natural mineral waters, we have followed the lead of Philadelphia men, and used 5 grains each of sulphide and chloride of sodium in 20 ounces of water. Furthermore, not satisfied with employing the apparatus in strict accord with Bergeon's principles, as enunciated by Bennet, some of us have been in the habit of generating enough carbonic acid to suffice for several treatments, instead

of filling the gas bag afresh on each occasion. When gas is left in the rubber bag, atmospheric air enters by endosmosis and is liable to give the patients colic, an objection to the treatments of which I have heard physicians complain. Furthermore, the quantity of gas administered has not been exactly known. To be sure, it is claimed that one can ascertain this by measuring the capacity of the pressure bulb. This, I think, is an error, since when the bag is full and the gas under high pressure, it will bubble through the bulb in a steady stream. Also, as the gas grows less in the reservoir, the amount ejected by each pressure of the bulb becomes less than at first. Hence, the claim appears to me just, that for the most part, physicians have not known accurately how much gas they have injected.

Omitting for the present the fact that sulphuric acid is used in the generation of the carbonic acid, there is the source and percentage of the sulphuretted hydrogen to be considered. The great demand for Ypsilanti water reveals that in most instances it is the mineral water employed hereabouts. According to the official analysis of this water, it contains 21.0786 cubic inches of free hydrosulphuric acid to the gallon. A trifling computation shows that 1 litre of the fresh water holds about 91 cc. of free sulphuretted hydrogen, and a ½ litre, therefore, in the neighborhood of 45 cc. But does anybody imagine that the bottled water sold to us here at such exorbitant prices holds anything like as much free hydrosulphuric acid as that freshly drawn from the spring? The water is brought here in barrels and then bottled. Under such circumstances it has lost probably more than half of its free gas. But granting that it still contains the half of its original charge, a pint of the water (a pint being little less than ½ litre) would hold less than 23 cc. of sulphuretted hydrogen. Now, if 4 litres of carbonic acid be passed through half a litre of the water, it would therefore become charged with less than 1 per cent., even should the CO_2 cause the sulphides contained in the water to give up still more sulphuretted hydrogen. As will be seen later, this proportion of the two gases is too little to produce the results obtained in France. Yet, if there be a larger percentage of sulphuretted hydrogen in Ypsilanti water than I have supposed, there is still the objection that its *actual amount* is unknown. Finally, this water is so dear, and the outrageous advertisement of it in the *Chicago Times*, May 8, was of such a nature, as to lead to the inference that the dealers in the water are disposed to fatten off of the necessities of suffering humanity. Therefore, led by the considerations just stated, I have ventured to place before the readers of THE JOURNAL the suggestions offered in the French article mentioned above.

1. The gas-reservoir should be emptied of all air before being filled with carbonic acid. 2. The CO_2 should be generated by the action of a vegetable acid, preferably tartaric acid, upon sodium bicarbonate, in proportion of 16 grammes of the former to 20 of the latter. 3. The quantity of gas injected at a time should not exceed 4 litres, in some cases only 1 litre, according to the requirements of the patient. 4. An artificial solution of sulphuretted hydrogen is fully as good as, if not superior to a natural sulphur water. 5. This water should consist of a solution of sodium sulphide of such strength as will furnish a definite quantity of hydrosulphuric acid. 6. The rectal nozzle should not be introduced until the medicated gas has begun to flow out of its extremity, thus precluding the entrance of atmospheric air.

Tartaric acid is preferred to a mineral acid on the ground that the latter generates vapors which may render the CO_2 irritating to sensitive, ulcerated bowels. Personally, I have found my CO_2 would make my nostrils sting even after it had been passed through the mineral water. Hence, although tartaric acid is dear, I shall advocate its use. A sufficient quantity to charge the gas bag for a single treatment would cost about five cents.

Eau Challes is stated to be the strongest sulphur water in France, containing an amount of sulphides capable of evolving in the presence of tartaric acid 150 cc. of sulphuretted hydrogen to the litre of water. In order, therefore, to produce an artificial water of equal strength, the two following solutions are used at Cochin Hospital, Paris: No. 1, of pure sulphide of sodium, 10 grammes; of distilled water, 100 cc. Solution No. 2, of tartaric acid, 25 grammes; salicylic acid, 1 gramme; distilled water, 100 cc. The sodium sulphide must be *pure* and *fresh*. The salicylic acid does not all dissolve, but is added to prevent the development of fungi. When 1 cc. of the second solution is added to 1 cc. of the first, exactly 10 cc. of pure sulphuretted hydrogen are generated. Therefore, if 15 cc. of each solution are poured into a litre of plain water, 150 cc. of hydro-sulphuric acid are set free, and an artificial sulphur water of equivalent strength to Eau Challes is produced. Now, elsewhere in the article referred to, it is stated that 250 cc. of the sulphur water are put into the wash-bottle through which the CO_2 is to pass. This amount, one-fourth of a litre of water containing 150 cc. of free sulphuretted hydrogen, would yield to 4 litres of CO_2 sent through it, one-fourth of 150 cc., or about 40 cc. of the medicament; and this is 1 per cent.

The question may here be asked: Does the carbonic acid absorb all of the free sulphuretted hydrogen in the water? But, whether it does or not, this appears to be the proportion of free hydrosulphuric acid held in the water employed at the Cochin Hospital. In order to obtain the required amount, then, for a single treatment, one should proceed as follows: After having filled the gas bag with 4 litres of CO_2, pour into the wash-bottle 250 cc. of warm water, and then add separately 4 cc. of each of the solutions given above. You will then pass 4,000 cc. of carbonic acid through water holding in solution 40 cc. of sulphuretted hydrogen, which is 1 per cent. of the latter.

Here, then, is something approaching accuracy; and if these directions, as furnished by *Les Nouveau Remèdes*. are followed, it is to be hoped we shall soon have more satisfactory results to report in this country. As yet I have not had time to report the effect of treatment carried out according to these suggestions. In closing let me thank H. C. Wood's con-

tribution to the *Therapeutic Gazette* for having put me on the track of the article in the French journal, although it would seem that I have drawn widely different conclusions from its statements than those given by him. In another letter I may describe a simple apparatus by which the quantity of carbonic acid injected may be accurately measured. Very respectfully, Robert H. Babcock, M.D.

70 Monroe St., Chicago, May 14, 1887.

BOOK REVIEWS.

The Science and Art of Obstetrics. By Theophilus Parvin, M.D., LL.D., Professor of Obstetrics and Diseases of Women and Children in Jefferson Medical College, Philadelphia, and one of the Obstetricians to the Philadelphia Hospital. Octavo, pp. xv, 701. With illustrations. Philadelphia: Lea Brothers & Co., 1886. Chicago: A. C. McClurg & Co.

Few books issued from the American press during the year, have been awaited with the same degree of expectancy as "Parvin's Obstetrics"—a fact not at all remarkable, in view of the author's well earned reputation and great influence as practitioner, teacher, and writer. Then, too, the subject is one of intense interest to every member of the profession. Accordingly, we turn over the pages with unusual attention, and venture with diffidence to express a brief opinion as to the value of a master's work.

"The first necessity of a book," says Edward E. Hale, "is that it shall be entertaining. If, therefore, the book do not interest me, I consider that I have, *prima facie*, a right to put it on one side, before it puts me to sleep." Parvin's book is entertaining. No one can go to sleep over it. From introduction to end it chains attention. In the choice of words, their number and arrangement, the acute student of verbal criticism is at once apparent. Clearness, force and elegance are the essential qualities of his style. Passages of unusual beauty are constantly recurring, *vide* "Diagnosis of Pregnancy," p. 178; "Management of Pregnancy." p. 210; "Lactation," p. 539; "Induction of Abortion," p. 601; "Embryotomy," p. 650. Traces of a refined and delicate sense of humor pervade the book, but the dignity of the subject is never lowered by coarse or unseemly jests. It is not a little annoying, however, to note numerous and important typographical errors in a piece of literary work of such a high order. Ben Jonson wrote *Bartholomew Fair*, not "Vanity Fair," *vide* p. 156. Then, Littlewit's[1] words were, "O yes, Win: you may long to see, as well as to taste, Win: how did the pothecary's wife, Win, that longed to see the anatomy, Win? or the lady, Win, that desired to spit in the great lawyer's mouth, after an eloquent pleading?" The elevated tone of discourse becomes at times a trifle more ecclesiastical than is consonant with the canons of good taste or the requirements of a scientific treatise. Grammatical lapses, although infrequent, do occur. "Case where," instead of "Case in which," disfigures the appearance of many an otherwise fair sentence, pp. 178, 441. On page 284, the author states that hydramnios, or hydramnion, is an incorrect term, polyhydramnios being preferable. He persists, however, in the use of the alleged incorrect term, pp. 284, 384.

Let us pass on to the matter of the book. Parvin has attempted "to present the most recent information relating to obstetrics, at the same time not overlooking important truths established by past experience"—truly a difficult task, never, up to the present time, adequately performed by any American or English writer. In the execution of this object, he has drawn too exclusively from French literature, while he has neglected, to an utterly inexcusable degree, the teachings of the Germans in general, and of the Vienna School, in particular. The Vienna School is very generally and very justly regarded as a sort of ultimate court of appeal, in all matters pertaining to the science and art of midwifery, and its teachings are in a high sense mandatory.

This defect constitutes an essential weakness that cannot be remedied, the severest criticism that can be passed upon the book. It may be said in palliation of this fault, that most Americans are familiar with German modes of thought, while they are comparatively ignorant of French notions. In the utilization of the work of other men Parvin thoroughly maintains his own individuality. He never sinks to plagiarism,—by no means a negative virtue. His book can never be mistaken for a translation of Spiegelberg's magnificent classic. The results of his own observation and experience are recorded with becoming modesty.

Let us examine the book in detail. Parvin still insists that the sacro-iliac and pubic articulation are symphyses, and not true joints (p. 25), the results of the investigations of Luschka, Strauss, Müller, Budin, to the contrary notwithstanding. The important subject of velamental insertion of the cord (pp. 131, 132) is disposed of in twenty-seven words—conveying an erroneous notion of the condition—and is illustrated by a cut of a "battledore" placenta! He does not mention the important function of the mammary gland, *in utero*, in the production of the *vernix caseosa*.—an activity that explains in part the "painful swelling of the breasts" with the secretion of colostrum in the new-born, male and female (pp. 88, 545). The chapter on the behaviour of the *cervix uteri* during pregnancy and labor—a subject of great theoretical and practical interest—is totally inadequate. Hegar's so-called new sign of pregnancy is worthy of more distinct recognition than the scant inaccurate allusion on page 184. Rasch's[2] sign of uterine fluctuation, detectible through the anterior uterine wall as early as the eighth week, is not mentioned. Mediate auscultation (p. 189) with a stethoscope "not less than six inches, about fifteen centimetres, long," is urged for the reason, among others, that "the direct application of the ear to the abdomen is indelicate!" A remark not unlike that of the Philadelphia lecturer, who said that the man

[1] William Gifford: The Works of Ben Jonson. London, 1870, p. 325.

[2] British Medical Journal, Vol. ii, 1873.

was lacking in fine feeling, who would practice immediate auscultation, and take advantage of a poor woman, when the cry of shame was hidden by the cry of pain. Mediate auscultation, unless the bell of the instrument be very large, is practically useless in the recognition of the sounds of the fœtal heart, as a very limited experience will convince the most casual observer.

On the treatment of *placenta prævia*, Parvin remarks: "If loss of blood be slight, and especially if the fœtus be not yet viable, the expectant plan is indicated" (p. 319). Experience teaches that there is no expectant treatment of placenta prævia, and that the evacuation of the uterine contents is urgently indicated as soon as the condition is discovered. As a matter of fact, however, unavoidable hæmorrhage seldom occurs before the latter part of the second half of pregnancy, and the induction of premature labor—not of abortion—comes up for consideration. The cotton tampon, as a means of checking hæmorrhage until the os is sufficiently dilated to admit of version or the forceps, is discussed at length, but no allusion is made to the far simpler, safer, and more effective method of colpeurysis, proposed and practiced by Carl Braun. Then in the employment of the cotton tampon, there is no necessity for stuffing the vagina to its maximum capacity, as illustrated in the cut on page 322. The Vienna method of perineal protection—effective in the large majority of cases—is inadequately described on page 411. The balloon catheter of Gustav Braun and Hüter is not mentioned in the paragraph on "Insufflation through a Tube passed into the Larynx" (p. 420). The prophylaxis of puerperal fever is disposed of with a single page (593) of vague generalizations, a subject. in the light of the discovery of Semmelweis, that justifies, demands the use of dogmatic aphorisms.

The weakest part of the book is the chapter on "Obstetric Operations" (p. 601). Wright's method of version is not at all identical with Braxton Hicks' method, as intimated on page 607. We look in vain for a discussion of the "conditions" and "indications" for version—an unpardonable omission. The weight of professional opinion is so opposed to the application of the forceps to the pelvis, that the description of the mode of application, on page 646, is unnecessary. Cephalotripsis is practically an obsolete operation, yet it is fully described and well illustrated. Cuts of old-fashioned instruments mar the pages devoted to craniotomy. Levret's murderous perforator and Meigs' craniotomy forceps seem in the mind of the author to be adequate substitutes for Carl Braun's curved trepan and cranioclast! The Smellie-Veit method of "extraction" and "manual aid" in pelvic presentations is not mentioned. In speaking of "Decollation or Decapitation" (p. 659), Parvin says: "This operation can be very quickly done by means of a piece of strong twine, which is thrown around the neck, then used as a saw, to-and-fro movements given it, burying it deeper in the cervical tissues, until finally the section is completed." This sentence really requires no comment. It is utterly absurd. It presents *prima facie* evidence that the writer himself has never performed the operation, nor seen it performed by others. It would also seem to indicate that he had read very little on this topic,—aside from Playfair's Treatise, Fifth Edition, 1884, vol, ii, p. 224. It is unnecessary to add that decapitation is justly regarded by authorities on operative obstetrics as the most difficult, and one of the most dangerous procedures, in this special department of surgery. These are only a few of the sins of omission and commission, but they are sufficiently grave in nature to imperatively demand that the chapter be re-written.

Viewed as a whole, we regard "Parvin's Obstetrics" as the best exposition of the subject, issued from the American press, up to the present time; and we know of no book, equal to it in all respects, that has emanated from an English source. It must be admitted, however, that the work is very faulty. The author has not given us that which his distinguished ability entitled us to expect. W. W. J.

ASSOCIATION ITEMS.

AMERICAN MEDICAL ASSOCIATION.

The Thirty-eighth Annual Session will be held in Chicago, Ill., commencing on Tuesday, June 7, at 11 A.M., in Central Music Hall, corner of State and Randolph streets, and will continue four days. Good rooms for the several Sections will be provided as near the hall for general meetings as possible. Registration books will be open in Central Music Hall on Monday, the day preceding the meeting, for those who wish to register early.

In addition to the list of papers already published, the following are promised:

Section of Diseases of Children.

C. E. Briggs, M.D., St. Louis, Mo., "On Spasm of the Larynx and Œsophagus."

L. Duncan Bulkley, M.D., New York, "On Infantile Feeding, Especially with Reference to Subjects with Infantile Eczema."

Section on Practice of Medicine, Materia Medica and Physiology.

L. Duncan Bulkley, M.D., New York, "On the Treatment of Felon Without Incision."

Byron H. Daggett, M.D., Buffalo, N. Y., "On a Convenient and Practical Method of Administering Bergeon's Treatment."

Section on Obstetrics and Diseases of Women.

Henry O. Marcy, M.D., Boston, Mass., "Cystitis in the Female."

W. H. Wathen, M.D., Louisville, Ky., "Rupture of the Uterus."

Section on Surgery and Anatomy.

Alex. Y. P. Garnett, M.D., Washington, D. C., on "The Surgical Treatment of Suppurative Pleuritis in Children."

Robert Newman, M.D., New York, "Synopsis of the Second Hundred Cases of Stricture of the Urethra Treated by Electrolysis."

E. A. Wood, M.D., Pittsburgh, Pa., "A Deformity and Disability following a Form of Injury to the Ankle Joint."

J. McFarland Gaston, M.D., Atlanta, Ga., "On the Pathology, Diagnosis and Treatment of Perforation of the Appendix Vermiformis."

Joseph Jones, M.D., New Orleans, La., "A New Method of Testing the Relative Value of Certain Antiseptics, Disinfectants and Germicides Employed Internally and Externally in the treatment of Wounds and Syphilis."

S. T. Armstrong, M.D., Memphis, Tenn., "Trephining in a Case of Intermingeal Hæmaturia with Hemiplegia."

A. H. Wilson, M.D., Boston, Mass., "The Prostate Gland; a Review of its Anatomy, Pathology and Treatment."

Section on Ophthalmology, Otology and Laryngology.

J. J. Chisolm, M.D., Baltimore, Md., "The Results of a Year's Experience in the Abandonment of Eye Bandage."

Wm. Porter, M.D., St. Louis, Mo., subject not announced.

W. F. Montgomery, M.D., Chicago, Ill., "After-Treatment of Cataract Extraction."

Geo. E. Frothingham, M.D., Ann Arbor, Mich., "A Case of Epilepsy Apparently Cured by Correcting Hypermetropia." "Two Cases of Tumor of the Optic Nerve."

Section on Medical Jurisprudence.

Wm. C. Wile, M.D., Philadelphia, Pa., "On Expert Testimony."

FACTS REGARDING RAILROAD RATES.

[The following letter sufficiently explains itself, which we cheerfully publish, as under.—ED.]

TO THE EDITOR:

My Dear Sir:—Kindly afford space in this week's issue of THE JOURNAL, and until June 4, please, by publishing the subjoined valuable information, as to those who anticipate attending the coming meeting of the American Medical Association, it will be of much practical interest—as well also, that it will be a REPLY in full to inquiries of many physicians, whose valued favors have unavoidably remained unanswered, simply because a number of our good friends have written substantially in the same manner from various parts of the country, desiring information regarding railroad rates, etc. And by your publishing a statement of the facts herein contained, it will be accepted by the Committee on Transportation as a favor personally to each of its members, and at the same time it will also be an answer to the many questions thus far received by this Committee, and which we have not had the time to respond to individually, as well as a reply to those who contemplate writing to the Committee upon the points enumerated above, and greatly oblige, Yours truly,

LISTON H. MONTGOMERY, M.D.,
Chairman Com. on Transportation.

189 Randolph St., Chicago, May 18, 1887.

Upon all railroads within territory bounded as follows:

On the East, by the western termini of the Trunk Lines, which termini are: Toronto, Canada; Suspension Bridge, Niagara Falls, Tonawanda, Black Rock, Buffalo, East Buffalo, Buffalo Junction, Dunkirk, and Salamanca, N. Y.; Pittsburgh and Allegheny, Pa.; Bellaire, Ohio; Wheeling and Parkersburg, W. Va.; and Ashland, Ky.

On the North, by the line of the Grand Trunk Railway from Toronto to Port Huron, including the points thereon, thence via the Great Lakes to Chicago.

On the West, via the west line of Cook Co. Ill. (the county in which Chicago is located) to, and via the Illinois and Mississippi Rivers to Cairo, including St. Louis, and all other points on said lines and rivers, the extensions of the Wabash, and Toledo, Peoria & Western Railways westward from said boundary—as well as *on the South* by the Ohio River.

Delegates, members, and their families are instructed that at time they purchase their tickets going to Chicago, the Agent will furnish you with a certificate or receipt at time of said purchase, stating that you have paid full fare to place of meeting. This certificate or receipt is positively necessary for you to get from the ticket agent, which will afterwards require to be endorsed by the Chairman of the Committee on Transportation at Chicago, stating that you have been in attendance at the meeting. This will enable you to get your ticket for the return journey at *One-Third the Lowest Regular Limited Fare.*

In case there is no limited fare to the point desired, one-third of the regular unlimited fare will be used.

Tickets for return journey are limited to continuous passage, and should be used on first train after they are purchased, although the certificates will be good *three days* after the Association adjourns. And no certificate or receipt will be honored at Chicago which was procured from agent at starting-point more than *three* days prior to date of meeting. Thus it will be seen the certificates are good until used within the above described territory, ten days, and include all those lines that have not already been published in former issues of THE JOURNAL.

For delegates, members and their families who reside at points in Trunk Line territory (study the list of roads embraced therein) blank certificates will be furnished you by the Chairman of the Committee on Transportation at Chicago, if in good time you requisition me for the necessary number. This can be done on, and after May 24. These blank certificates will be furnished parties from points east of Niagara Falls, Buffalo, Salamanca, Pittsburgh, Petersburg or Wheeling, which will be certified to by the agent at starting-point, stating that you have paid full fare through to Chicago. It is absolutely imperative that certificates for this territory be in the hands of parties at the time of purchasing their "going" tickets, to get the ticket agent's receipt, and will require to be endorsed by the Chairman of the Transportation Committee at the meeting, to enable the holders to get the concession returning, which will be *one-third the lowest regular limited fare.* These certificates are also good three days after the Association adjourns, or ten days altogether.

Regarding the Western Roads, specific knowledge cannot at this time be given as to the plan each of them will pursue. Ticket Agents for the Chicago, Milwaukee & St. Paul Railway will give each person a receipt who has purchased a ticket, stating that full fare has been paid to Chicago. This receipt will be endorsed as described above, thus entitling the holder to return at *one-third the lowest limited fare*, and applies to all parties in attendance at the meeting; in all cases, however, the return rate will be made one-third the regular fare. The Chicago & Alton simply requires for its protection, a certificate as per form prepared by the "Committee." having this matter in charge, properly endorsed at Chicago, to secure the reduced fare of one-third the regular rate, etc., for each person in attendance.

The Illinois Central will also honor tickets in the same manner as will the Chicago & Alton when vouched for in the same manner.

The Chicago, Burlington & Quincy has adopted the same plan as that of the C. M. & St. P. Road.

The Chicago & Northwestern will pursue a similar plan, that of giving to each purchaser a receipt for the amount of full fare, going, as will, doubtless, most of the other lines within the territory leading west, southwest and northwest from Chicago, as far at least as the Mississippi and Missouri rivers. Tickets over the lines west of Chicago will not be honored after June 12. Negotiations are not yet completed, but from present knowledge, the indications are, that the following roads will also give the reduced rate, amounting to a fare and one-third, for the round trip to delegates and their families:

Union Pacific.
Burlington & Missouri River.
Atchison, Topeka & Santa Fé.
Denver & Rio Grande.
Gulf, Colorado & Santa Fé.
Houston & Texas Central.
Texas & Pacific.
Missouri Pacific.
Southern Pacific.

St. Louis, Arkansas & Texas.
St. Louis & San Francisco.
Iron Mountain.
Atlantic & Pacific.
Northern Pacific.
St. Paul, Minneapolis & Manitoba.
St. Paul & Duluth.
As well, too, as the following Steamboat Lines:
Goodrich.
Lake Michigan and Lake Superior.

In all cases, except where stipulated otherwise above, it is advisable that you get from the Ticket Agent at the time you procure your tickets to Chicago, a receipt from Agent, stating that you have paid full fare going, and which must invariably be shown the Chairman of Transportation Committee at place of meeting.

Upon the forty-two Southern Roads enumerated (see list), you are required to procure a certificate, similar to that required of parties who live in territory occupied by the Trunk Lines, viz., by sending to the Chairman of Transportation Committee, at Chicago, for the necessary number, etc., which you can procure on and after May 24.

Certificates are good to return on these Southern Lines only, twenty-four hours after adjournment, *i.e.*, good until June 11. And in every instance upon all the roads named, you are required to return the same route as upon going.

It seems as though the above information embraces every possible inquiry that can be propounded, and we trust a largely representative meeting will be held, in which we are joined by the hearty wish and co-operation of the entire profession of Chicago. Further particulars may be obtained by addressing

DR. LISTON H. MONTGOMERY,
Chairman of Committee of Transportation.
Briggs House, No. 189 Randolph St., Chicago.

The roads which will accept return tickets on the certificate plan are:

Baltimore & Ohio (west of the Ohio River).
Buffalo, New York and Philadelphia.
Chicago & Grand Trunk.
Cincinnati, New Orleans & Texas Pacific.
Chicago, Vincennes & Cairo Line.
Chicago & West Michigan.
Chicago, St. Louis & Pittsburgh.
Cincinnati, Hamilton & Dayton.
Cincinnati, Indianapolis, St. Louis & Chicago.
Cincinnati, Washington & Baltimore.
Cleveland, Akron & Columbus.
Cleveland & Marietta.
Cleveland & Pittsburgh.
Cleveland, Columbus, Cincinnati & Indianapolis.
Cleveland, Loram & Wheeling.
Columbus & Cincinnati Midland.
Columbus, Hocking Valley & Toledo.
Chesapeake & Ohio.
Chicago & Atlantic.
Dayton & Ironton.
Detroit, Lansing & Northern.
Dayton & Union.
Detroit, Grand Haven & Milwaukee.
Evansville & Terre Haute.
Flint & Pere Marquette.
Fort Wayne, Cincinnati & Louisville.
Grand Rapids & Indiana.
Grand Trunk.
Indianapolis & St. Louis.
Indianapolis & Vincennes.
Indianapolis, Bloomington & Western.
Indianapolis, Decatur & Springfield.
Jeffersonville, Madison & Indianapolis.
Kanawa & Ohio.
Lake Erie & Western.
Lake Shore & Michigan Southern.
Lousiville & Nashville.
Louisville, Evansville & St. Louis.
Louisville, New Albany & Chicago.
Michigan Central.
Michigan & Ohio.
New York, Chicago & St. Louis.
New York, Pennsylvania & Ohio.
Niagara Falls Short Line.
Ohio & Mississippi.
Pennsylvania.
Peoria, Decatur & Evansville.
Pittsburgh & Lake Erie.
Pittsburgh & Western.
Pittsburgh, Cincinnati & St. Louis.
Saginaw Valley & St. Louis.
Scioto Valley.
Toledo & Ohio Central.
Toledo, Peoria & Western.
Valley Railway.
Vandalia Line.
Wabash Railway.
Wheeling & Lake Erie.
Baltimore & Ohio (east of Parkersburg, Bellaire & Wheeling.)
Baltimore & Potomac.
Bennington & Rutland.
Boston & Albany (on business between common points in New England and points west of, but not including Albany.)
Boston & Lowell.
Boston, Hoosac Tunnel & Western.
Buffalo, Rochester & Pittsburgh.
Camden & Atlantic.
Central Vermont.
Delaware & Hudson Canal Co.
Delaware, Lackawanna & Western.
Fitchburg.
Lehigh Valley.
New York Central & Hudson River.
New York, Lake Erie & Western.
New York, Ontario & Western.
Norfolk & Western.
Northern Central.
Philadelphia & Erie.
Philadelphia & Reading.
Philadelphia, Wilmington & Baltimore.
Rome, Watertown & Ogdensburg.
Shenandoah Valley.
Troy & Boston.
West Jersey.
West Shore.

The following named lines offer one and one-third fare for round trip:

Burlington, Cedar Rapids & Northern Railway.
Central Iowa Railway.
Chicago & Alton Railroad.
Chicago & Northwestern Railway.
Chicago, Burlington & Northern Railway.
Chicago, Burlington & Quincy Railroad.
Chicago, Milwaukee & St. Paul Railway.
Chicago, Rock Island & Pacific Railway.
Chicago, St. Paul, Minneapolis & Omaha Railway.
Green Bay, Winona & St. Paul Railroad.
Hannibal & St. Joseph Railroad.
Illinois Central Railroad.
Kansas City, St. Joseph & Council Bluffs Railroad.
Milwaukee & Northern Railroad.
Milwaukee, Lake Shore & Western Railway.
Minneapolis & St. Louis Railway.
Minnesota & Northwestern Railroad.
Missouri Pacific Railway.
Rock Island & Peoria Railway.
Sioux City & Pacific Railroad.
Wabash Western Railway.
Wisconsin Central Lines.

A list of forty-two Southern roads which will accept return tickets issued under the certificate plan.

Alabama Great Southern Railroad.
Atlanta & West Point.
Brunswick & Western,
Central Railroad of Georgia.
Central Railroad of South Carolina.
Charleston & Savannah.
Cheraw & Darlington.
Cheraw & Salisbury.
Cincinnati, New Orleans & Texas Pacific.
East Tennessee, Virginia & Georgia.
Georgia.

Georgia Pacific.
Illinois Central (south of Ohio River).
Jacksonville, Tampa & Key West.
Louisville & Nashville (south of Ohio River).
Louisville, New Orleans & Texas.
Memphis & Charleston.
Mississippi & Tennessee.
Mobile & Ohio (south of Ohio River)
Nashville, Chattanooga & St. Louis.
New Orleans & North-Eastern.
Norfolk & Western.
North-Eastern Railroad of Georgia.
North-Eastern (of South Carolina).
Pennsylvania (south of Washington).
Petersburg.
Port Royal & Augusta.
Raleigh & Gaston.
Richmond & Alleghany.
Richmond & Danville, and leased lines.
Richmond, Fredricksburg & Potomac.
Richmond & Petersburg.
Rome.
Savannah, Florida & Western.
Seaboard & Roanoke.
Shenandoah Valley (south of Potomac River.)
South Carolina.
Vicksburg & Meridian.
Western & Atlantic.
Western Railway of Alabama.
Wilmington, Columbia & Augusta.
Wilmington & Weldon.

MISCELLANEOUS.

THE AMERICAN LARYNGOLOGICAL ASSOCIATION will hold its ninth annual session in the Hall of the New York Academy of Medicine on May 26, 27 and 28, under the Presidency of Dr. E. Fletcher Ingals, of Chicago.

DR. SELIM PACHA.—From the *British Medical Journal* we learn that the Khedive has nominated Dr. Selim Pacha to represent Egyptian Medicine in the approaching International Medical Congress.

DR. ROBERT BARNES, of London, has been elected an Honorary Fellow of the Chicago Gynæcological Society.

THE ASSOCIATION OF MEDICAL EDITORS will meet at the Palmer House, Chicago, at 8 P.M., on the Monday evening preceding the meeting of the American Medical Association. The President, Dr. Shoemaker, will deliver an address on "Some of the Present Abuses of Medical Literature." This organization is permanent, and largely social, and it is desired that medical editors who can attend the meeting will do so. Those who expect to be present should send their names as soon as possible to Dr. Wm. Porter, 3137 Lucas Ave., St. Louis. Dr. J. L. Gray, 70 Monroe St., Chicago, is Chairman of the Committee of Arrangements.

KENTUCKY STATE MEDICAL SOCIETY.—The next annual meeting of this Society will be held in Paducah, on the 15th, 16th and 17th of June, 1887. Dr. W. N. Wathen, of Louisville, is President, and Dr. Steele Bailey, of Stanford, Secretary. A full attendance is expected.

THE CONGRESS AND TRANS-ATLANTIC STEAMSHIP FARES.—The London *Lancet*, of May 7, 1887, says: "We understand that Messrs. Henderson Bros., managing owners of the Anchor Line of Steamships, from Glasgow to New York, have decided to offer to members of the medical profession desirous of attending the International Medical Congress to assemble at Washington, in September next, return tickets to New York for £20, giving the best accommodation at this low rate."

ENGLISH SOCIETY FOR THE STUDY AND CURE OF INEBRIETY.—The Council of this Society have called an International Congress, to be held in Westminster Hall, London, July 5 and 6, 1887, for the purpose of discussing the problems of inebriety medically. Papers have been promised from a number of eminent men in different countries, and the meeting will doubtless be a profitable and interesting one, under the Presidency of Norman Kerr, M.D., F.L.S., London. T. D. Crothers, M.D., of Hartford, Conn., is the American member of the Committee of Arrangements.

NEW YORK STATE MEDICAL ASSOCIATION.—The Fifth District Branch will hold its third annual meeting in Brooklyn, at Remsen Hall, 190 Remsen St., on Tuesday, May 24, 1887. An interesting meeting is expected.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 7, 1887, TO MAY 13, 1887

Lieut.-Col. C. T. Alexander, Surgeon, granted leave of absence for four months, with permission to go beyond sea, to take effect May 23, 1887.

Capt. P. F. Harvey, Asst. Surgeon, granted leave of absence for four months, with permission to go beyond sea, to take effect June 10, 1887. S. O. 105, A. G. O., May 7, 1887.

Capt. Victor Biart, Asst. Surgeon, ordered for examination by Army Retiring Board at Ft. Leavenworth, Kans. S. O. 107, A. G. O., May 10, 1887.

Capt. F. W. Ellery, Asst. Surgeon, ordered for examination by Army Retiring Board at Washington, D. C. S. O. 109, A. G. O., May 12, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING MAY 14, 1887.

Gravatt, C. N., Surgeon, detached from the U. S. Str. "Michigan."

Lumsden, G. P., P. A. Surgeon, ordered to the U. S. Str. "Michigan,"

Ashbridge, Richard, P. A. Surgeon, detached from the Naval Academy, and to the practice ship "Constellation."

Streets, Thos. H., P. A. Surgeon, promoted to Surgeon.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDED MAY 14, 1887.

Fessenden, C. S. D., Surgeon, detailed as chairman of Board for physical examination of cadets, Revenue Marine Service. May 13, 1887.

Stoner, G. W., Surgeon, to proceed to Delaware Breakwater as inspector, and to New York and Philadelphia to inspect unserviceable property. May 12, 1887.

Irwin, Fairfax, P. A. Surgeon, detailed as recorder of Board for physical examination of cadets, Revenue Marine Service. May 13, 1887.

Fattic, J. B., Asst. Surgeon, relieved from duty at Baltimore, Md.; ordered to Marine Hospital, St. Louis, Mo. May 13, 1887.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

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ORIGINAL ARTICLES.

THE CURE OF HERNIA.

Read in the Section on Surgery at the Thirty-seventh Annual Meeting of the American Medical Association, May, 1886.

BY HENRY O. MARCY, A.M., M.D.,

OF BOSTON, MASS.

Temerity born of ignorance would seem the only judgment to be passed upon one who would offer any further contribution upon the cure of hernia. The eighty closely printed quarto pages of the "Index Catalogue" of our National Library, giving only titles and authors, would presuppose an exhausted subject. Notwithstanding, from the Fathers to the present, the cure of hernia has remained in large degree an unsolved surgical problem, and the sale of supports and trusses increases with each decade. This paper is of narrow limit and has but the one definite object—that of teaching a single method of cure which the writer would commend in operative cases; yet, the importance of the subject demands brief notice.

Although hernia in all classes and ages, from infancy to old age, is a matter of daily observation by our profession, the statistics of Dr. J. H. Baxter, giving 5 per cent. of the total population as subject to such a disabling and dangerous affection, will surprise most who are not special students of the subject. This gives nearly three millions of people, of all ages and conditions, in the United States alone, who are sufferers in a greater or less degree from this affection. One English firm manufactures over 50,000 trusses a year, chiefly for home supply. As quoted by Mr. Spanton in 1881, as referable to Great Britain, "the mean annual rate of mortality for the year 1879 was 45 deaths to every 1,000,000 living; and to make the significance of this more manifest, I may point out that while calculus killed 237 persons in the year 1879, and all malformations (except spina bifida) put together, 219; gout 662; and all uterine diseases only 1,068, hernia caused the death of 1,119 in the same period." Table II shows that out of 1,870 cases of operation, in hospitals, etc., for strangulation, there occurred 782 deaths, giving 41.80 per cent. of mortality. This has been greatly lessened by modern methods of wound treatment, but the injury to the intestine by the constriction still remains a danger to the patient, often far exceeding those incident to operative measures. We can do no less than second with all earnestness the plea so ably set forth by Mr. Spanton in England and Dr. Joseph Warren in America, to effect by operative measures a cure in a large class of these sufferers, especially in the young, rather than condemn them to lifelong discomfort from support and a perpetual risk of disability and death. The revolution in abdominal surgery, during the last decade, renders less imperative the need of enforcement, by argument, of proper antiseptic precautions by which peritoneal wounds are rendered almost devoid of danger; rules enforced in my earlier writings upon hernia, as a duty of religious exactitude; now, however, like the church dogmas, accepted in theory, but obeyed with a laxity which brings discredit upon the faith.

The etiology and causation of hernia cannot even be referred to here; but the fact that about one-eighth of the entire number occurs in childhood, renders it probable that a congenital lack of proper development is a fundamental factor in its production.

My first operation for hernia which involved the essential principles now advocated was done seventeen years ago. The year previous, I had returned from Edinburgh, a convert to the teachings of Prof. Lister. The omentum with a loop of the intestine was incarcerated, stercoraceous vomiting had ensued, and the patient was *in extremis*. The hernia was old, the ring large, the pillars weak; and the patient, advanced in years, had a very troublesome bronchial cough. The operation was antiseptic in method, and, owing to the cough, the deep pillars of the ring were stitched together with large catgut sutures and the wound closed, to prevent a prolapse of abdominal contents, rather than with any thought of cure. The cough continued severe until the patient's death, six years later, but there was no return of the hernia.

I first published an article on hernia in 1871, advocating this method, with a report of this and one or two other cases. In 1878, I reprinted from a communication offered to the Association, a paper giving a considerable series of cases and a study of the histological metamorphosis which tendinous structures undergo when incorporated into the tissues. These observations were made upon two cases of the human subject in which I had operated some months previous and death had supervened from acute disease; also a series of studies upon rabbits and puppies. In 1881 I communicated to the International Congress in London further observations upon the same subject, with a list of cases, and emphasized the removal of the peritoneal pouch as important in preventing return of the affection.

There can be no doubt but that many cases which are reported cured by any of the various methods of operation, in the end prove failures; since a very considerable period must elapse before one can be at all sure of results. This should cause hesitation in tabulating cases until they have continued for a considerable period under observation. Only recently have I seen a case of double hernia, where I witnessed a very skilful operation by injection, and examined the patient with great care one year after without detection of a weakening ring; but now, four years having elapsed, the hernia has returned, and the patient must again resort to a truss. I am led to believe that, in a very considerable class of cases reported cured, especially in the blind operations of subcutaneous sewing and injection methods, the hernia returns, because the deeper tendinous structures remain unclosed and the peritoneal sac unobliterated. Since the days of Morgagni, it has been repeatedly claimed that hernia was often produced by the elongation of the mesentery and a consequent prolapse of the intestines. This error is repeated even in our best text-books: as, for example, Bryant. The frequency with which the small intestines are found, at autopsies and in abdominal operations, in the pelvic cavity, would refute this supposition.

Mr. Treves' observations[1] are of much interest in their bearing upon this subject. He found the mesentery of the jejunum on the left side longer and looser at a point from six to ten feet from the duodenum. Here the mesentery attains a length of from nine to ten inches. In the right iliac fossa, at the lower part, the mesentery attains only about one-half this length. In one case out of the hundred examined, Mr. Treves found the intestines, in a woman of 70, could be drawn down eight inches below the crest of the ileum, and yet there was no hernia. If it is true that, in a majority of cases, the small intestines find easy lodgment as low as in the pelvic basin, the bearing of these considerations upon the cure of hernia becomes apparent. The pinching of the peritoneum over a weakened ring gives an effective lodgment of abdominal contents. The elongated omentum is continually slipping into the depression and acts as a wedge, driving the supporting walls apart, and often cases occur where it is wiser to remove an elongated, thickened mass rather than to replace and leave it to act as a future source of trouble. In a number of cases, I have removed considerable portions of omentum, for this reason, without bad result.

Interesting as is the anatomy of hernia, we can only refer to the inguinal canal, as a passage from the deep to the superficial ring, one and one-half to two inches in length, doubly oblique in direction, and closed in a valvular way, by close apposition and by connective tissue attachment of its walls. In congenital cases, the tunnel-like projection of the peritoneum of pre-natal formation has not been obliterated, and the walls of the canal have become stretched and torn, until the valvular action of the canal is lost. Cure is effected by obliterating the peritoneal folds and closing from the very bottom the walls of the canal. In most instances, the sudden production of hernia is only the final yielding to forces which have been of indefinite duration. I have operated upon every variety of hernia, and with considerable modification of detail. The usual method is simple and is outlined as follows: A careful shaving and cleansing of the external parts, using carbolic acid or mercuric bichloride solution. Soap containg ½ of 1 per cent. mercuric bichloride is very convenient. Each step of the operation is taken with strict antiseptic detail, usually under irrigation. If the abdominal cavity is opened spray is used. In inguinal hernia, in no instance have I made the incision in the scrotum as advocated by Mr. Wood, and it is usually parallel with Poupart's ligament and a little, perhaps half an inch, higher on the abdominal wall than the opening through the ring. The elasticity of the tissues allows of easy manipulation of the parts, and brings the external wound a little way from the fold of the groin, which facilitates a safer dressing and causes less irritation in the subsequent wearing of a support. The incision should be free and sufficiently long to insure easy inspection and ample room. Secure, of course, any vessel which bleeds—and yet, my experience does not confirm Mr. Wood's views in his recent lectures published in the *British Medical Journal*.[2] He says: "With respect to the supposed advantages of the open method, enabling the surgeon to see the parts on which he operates, I have myself found that, after the first cut and the application of the sponge, the parts became so bleared with blood, that I was obliged to rely mainly upon the sense of touch, before I ventured to pass a needle through Poupart's ligament, the conjoined tendon, or the pillars of the ring. My experience is that this operation can be all done, and has been very frequently done by me, when the sac to be removed is not very large, through a scrotal incision two inches long reaching up to the superficial ring."

Having divided the external tissues to a sufficient extent, draw up the peritoneal pouch quite sufficient to cause its obliteration upon the inner side and sew it evenly with fine tendon sutures by the so-called shoemaker's stitch. This encloses all the peritoneum and occludes it, while it has the advantage of a double thread and only one knot. Then cut away the redundant pouch and allow the peritoneum to drop back, in order not to include it in the deep suturing of the tendinous structures. In some cases, where the ring has been very large and the pillars much attenuated, I have folded the sac upon itself and incorporated it in the deep suturing, as a reinforcement to the tissues. However, I can but regard this as a doubtful measure; usually I have felt it wise to refresh the pillars before suturing as more likely to secure a firm union. The method of Mr. MacEwen, of suturing the peritoneal pouch in such a manner that it can be introflected upon itself—pursed up, so to speak—is, to say the least, ingenious; but it appears open to the objection of making an obstructive thickening of the peritoneum, over which normally

[1] Hunterian Lectures on the Anatomy of the Intestinal Canal and Peritoneum.

[2] June, 1885.

the pelvic contents should easily glide without obstruction or lodgment. It cannot strengthen the ring, since it is returned through it. This method appears to be offered as a substitute for opening the peritoneum, and appeals to the earlier fear entertained in regard to the surgical treatment of these tissues. Sewing through the peritoneal pouch and its excision is easier, equally safe and, in my judgment, offers promise of a better result.

The proliferation and repair of the tendinous structures, under favorable circumstances, are much greater than was earlier supposed. Formerly I used catgut, but for a number of years have preferred the tendon suture. That from the tail of the kangaroo is the best, since the fibres are more parallel and do not readily fray out as those of the ox, deer, or whale. With the finger within the ring, to protect the peritoneum and guide the needle, I introduce it quite one-half inch from the outer portion of the ring, and enclose the tissues to this width deeply to the peritoneum. The stitches are repeated at distances of about one-third of an inch, including both pillars of the ring, until the opening is securely closed—in the female completely and a little within the inner border; in the male, the parts are closed so as to carefully protect and secure the cord from injury. The suturing is simple, and I first devised it for the sewing of the large pedicle of uterine myoma and in the excision of the uterus. The needle is set in a firm handle and is without a cutting point, with the eye near the end. A half to three-quarter curve is preferable. The needle, threaded, is introduced, and the end unthreaded, the opposite end is threaded and withdrawn; this is continued until the seam is complete in as many and as fine stitches as may be thought best. A little care is necessary not to overconstrict the tissues and thereby cause necrosis. I have deemed this method of sewing important, since the great objection to the animal suture is the knot, which in this way is reduced to one, no matter how many stitches are required. Moreover, thus applied, the pressure on the enclosed tissue is equalized and injury therefrom reduced to a minimum; and if it is true, as my experiments lead me to believe, that the tendon suture is replaced by a proliferation of connective tissue, this method of reinforcement is doubly important. I have also used with satisfaction the over and over suture with the Hagerdorn needle, which possesses certain advantages now well known to the profession. A twisted horsehair is generally used for drainage, and the external wound closed by a fine continuous suture. Iodoform dressing is carefully applied, but the great danger is the infection of the wound during manipulation rather than after its closure. Care to avoid over-strain should be exercised for a considerable period, A water pad truss is advised to be worn for some months, but too much pressure is injurious.

The above procedure is simple, effective, and safe; when properly done, in the great majority of cases, the cure will be permanent.

A brief review of our literature will show that the operative measures for hernia, like all other surgical procedures involving the abdomen and its contents, are being rapidly modified. The operation known by my name has had a varied experience. It was at first condemned on theoretical grounds as dangerous, unscientific, and more radical in method than the cure sought. A few surgeons tried it and gave it up, reporting to me that the catgut which they used yielded in a few days.

The first case of cure reported in Great Britain was by Mr. Charles Steele, of Bristol (*British Medical Journal*, November 7, 1874), three years after the publication of my cases. Mr. Steele stated to me in 1881 that the cure of his case remained permanent. He used catgut antiseptically. As might naturally be supposed, Mr. Lister has repeatedly operated with good result. Prof. Annandale, of Edinburgh, operates in this manner. He prefers to remove the sac when easily done. Prof. Stokes, of Dublin, returns the sac unopened, believing the excision of the sac unjustifiable because of danger. Mr. Banks and Mr. Alexander, of Liverpool, report cases and advise removal of the sac; also Prof. Buchanan and Sir William McCormac.

Prof. MacEwen, of Glasgow, reported cures in 1880 from the use of chromicized sutures; also Mr. J. Whitson, in the *Medical Times and Gazette*. Prof. Czerny published in 1883 a paper in which he advocates the closing of the ring with sutures. Dr. Porter, of Boston, reports two cases thus cured, also L. Champonnière, of Paris, and others.

Subcutaneous wire suturing is of very ancient date. It fell into disuse and was condemned as dangerous, until within the present generation. Prof. J. C. Nott published a case of cure in 1845 from the use of the lead suture. Prof. John Wood, of London, a quarter of a century ago received a prize for an essay on the cure of hernia. His method is a subcutaneous closure by wire, the originality of the method dependent upon the way of introducing the wire. The remarkable skill of the operator, together with the shape of the needle, enabled Mr. Wood to secure and occlude the canal.

In that day, when septic infection of wounds, in hospitals, was the rule rather than the exception, subcutaneous surgery, even if blind, bungling, and imperfect, was commendable. With the record which Mr. Wood presents of a majority of cures, it is no wonder that he still, in large degree, advocates his methods, and it is very creditable to his spirit of enterprise that he is willing to adopt the tendon suture, instead of wire. "Latterly," he says, "I have used a stout piece of kangaroo, deer, or ox tendon, well antisepticized in carbolized oil, and softened just before using by soaking it in 1 to 40 carbolized lotion. The advantage of this is, that there is no necessity for disturbing the wound by the removal of the buried suture, as in the case of the wire and other methods."

From this it is apparent that he recognizes only the coaptation and constriction of the ligature, and not the re-enforcement claimed by the development of surrounding connective tissue.

The late Dr. McDowell, of Texas, by an equally ingenious method, using a needle of peculiar construction, subcutaneously wired the rings together,

and reported a large percentage of cures. Shortly before his death he informed me that, in his judgment, his operation left little to be desired. Mr. Spanton, whose paper has already been referred to, has devised an ingenious modification of subcutaneous suturing, combining the needle and constricting material in the same instrument, which closely resembles a cork-screw. This is introduced so as to incorporate the rings, and is left for a period of time sufficient to secure a large exudative mass about the ring, and is then withdrawn. No serious results have followed the operation in his hands, and he reports a very large percentage of cures.

The injection methods of which Dr. Warren, of Boston, is the world-wide known advocate, aim at a somewhat similar result. A very large exudation into the surrounding tissues follows, and undoubtedly many cures have thus been obtained.

The criticism pertains, in a large degree, to all these subcutaneous methods, that they belong to blind surgery; at the best, depend upon the tactile sense which, cultivated by the long experience of a Wood or Warren, may be trustworthy; but an operation which is to become general must be based upon a few simple, well understood factors, to be safely entrusted to the general surgeon. Prof. Tilanus, of Amsterdam, reported to the International Congress of 1878 a collection of 100 cases by Continental operators, by the open method of dissection, for the cure of hernia, both under and without antiseptic precautions, with a mortality of about 11 per cent. Prof. Annandale, of Edinburgh, has more recently reported 71 cases with 4 deaths, by various operators, but all under antiseptic precautions; 66 cases are claimed as cured.

The inaugural Thesis of Victor Cuenod, published in Lausanne in 1881, gives a detailed list of the cases operated on by his master, Prof. Socin, of Basle. He tabulates 34 cases, all of which were under repeated observation during many months; 22 cases remained cured, twelve failed in from six weeks to twenty-two months. He attributes failure, in most cases, to imperfectly prepared catgut and silk; following the use of the latter were very troublesome abscesses, although the silk was carbolized. In the entire list of failures (and the cases were all improved) there was not a single death. The catgut which was chromocized, or prepared in oil of juniper, proved satisfactory. The method was the open dissection with deep suturing of the pillars of the ring, under careful aseptic care and dressing.

In thirty operative cases recovery followed without serious symptoms. I have had two deaths; one a strangulated umbilical hernia, where I removed seven inches of gangrenous small intestine and joined it with a double row of fine tendon sutures. Death ensued about seventy hours after, from exhaustion, as the most probable cause, since there was no peritonitis and the edges were agglutinated by lymph exudation, so that the closed section held water. The other was a case of strangulated crural hernia, where the autopsy showed a slough of the returned constricted intestine, with the escape of its contents. These two cases are thus fairly excluded from the list.

In conclusion, I would advise operation by the above method:

1. In all cases of operation for strangulation.
2. In all cases where the abdominal contents are imperfectly retained by an instrument, unless the age and condition of the patient prevent.
3. In that large class of children when the conditions do not warrant a spontaneous cure.

This opinion is based upon the rigid enforcement of the aseptic principles of operative wound treatment.

THE USE OF A PLUS CYLINDER IN SIMPLE MYOPIC ASTIGMATISM OF LOW DEGREE;

And the Occasional Necessity for Changing the Axis of the Cylinder for Distance to a Different Axis for Reading.

Read before the Chicago Society of Ophthalmology and Otology, February 8, 1887,

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Errors of refraction assume so many forms and are so variously treated that I could wish very much to hear the whole subject discussed. This evening I wish to give examples of two classes of cases, in one of which I have more recently adopted a method of treatment, the merits of which entitle it to more general recognition. These are cases of simple myopic astigmatism of low degree (say $\frac{1}{40}$ to $\frac{1}{12}$). Whether they be due to spasm of accommodation or not, I am inclined to think it would always be best for near vision to substitute a plus cylinder, with its axis at right angles to that of the minus cylinder found for distance.

Dr. Culbertson asserts[1] that in non-spasmodic myopic astigmatism, a plus cylinder used as just stated will, in many instances, correct the ametropia, and he proceeds to illustrate the manner in which the ciliary asthenopia is relieved by the plus glass. I will quote only one passage as a sufficient reason for not coinciding with his explanation. He says: "By this minus glass for distance, the myopia in proximal vision has been simply transferred from one to the other plane, and the foci of the two planes are not of the same length." Now if an eye is made emmetropic for remote vision (by correcting its myopic meridian or otherwise), it is certainly emmetropic for proximal vision, and the foci of all the meridians must then be of the same length; and it will require accommodation only to receive a clear image of the near objects.

The reason of the advantage of a plus cylinder does not seem to me far to seek. The total accommodation (not "the unequal contraction of the ciliary muscle") is relieved by a plus glass. For example: Let us suppose an eye with a myopic astigmatism in the vertical meridian of 2.D (or $\frac{1}{20}$) to be corrected by a — 20c axis 180°, and now without accommodation to be adapted for remote vision or parallel rays. If the object be brought to 20" and

[1] American Journal of Ophthalmology, October, 1885.

a + 20s glass be placed before the eye corrected with the cylindric glass, the eye will still receive parallel rays, and, hence, an image without the necessity for accommodation. It follows that at whatever proximal distance the object is viewed with this + 20″ glass the ciliary muscle is relieved, an effort equal to + 20″ (or 2.D). Now the combined + 20s — 20c axis 180° is equal to a + 20c axis 90°.

This + 20c is perhaps preferred to the — 20c for the additional reason that it gives a larger image. Again, as in myopes, the ciliary muscle of the astigmatic myope may be reasonably supposed to be poorly developed and unequal to ordinary use. In other words, I would not give a weak minus cylinder in myopic astigmatism, for the same reason that a weak minus spherical is not given in myopia for reading.

Formerly I prescribed the minus cylinder, which the patient certainly preferred to astigmatic vision, and as a rule was satisfied with the improvement as compared with no glass. Recently I have given the option of a plus or minus cylinder, and in every instance (not a few) the plus was preferred. That is, with the latter the type was more distinct and reading more comfortable. What I supposed theoretically to be true the test of trial has verified. It is this: A simple myopic astigmatic (1) might read 1 Jaeger at 12″ imperfectly; (2) with a + spherical glass would read it still better; (3) with a minus cylinder still better; (4) and with a plus cylinder at right angles to that required by the minus the type could be read best and perfectly. In (1) the astigmatic image is indistinct; in (2) the astigmatic image is magnified; in (3) the image is clear; in (4) the corrected eye, the image is also clear and larger. This I think is preferred for the reasons previously mentioned. I will cite a few cases in illustration:

Case 1.—Hortense H., æt. 13, has had during the past year frequent attacks of phlyctenular conjunctivitis, and the edges of the lids have been red and swollen. After recovery from the conjunctivitis,

Under atropine R. E. V + 36c 180° = $\frac{20}{20}$.
Under atropine L. E. V — 36c 90° = $\frac{20}{30}$.
With accommodation R. E. V — 48c 90° = $\frac{20}{20}$.
With accommodation L. E. V — 36c 90° = $\frac{20}{30}$.
R. E. V = 1 J 12″ with — 48c 90° = 1 J 12″, better.
with + 48c 180° = 1 J 12″, best.
L. E. V = 1 J 12″ with — 36c 90° = 1 J 12″, better.
with + 36c 180° = 1 J 12″, best.

Glasses were ordered R. E. + 48c 180°; L. E. + 36c 180°.

Three months subsequently the lids recovered, and the patient prefers reading with the glasses, which completely relieve her of asthenopia.

Case 2.—Mrs. R., æt. 21. Since childhood her eyes have been more or less red and sore, and she has been unable to read, sew or paint longer than ten minutes at a time without straining her eyes.

R. E. V = $\frac{20}{30}$ = 1 J 12″ with difficulty.
L. E. V — 48s — 48c 180° = $\frac{20}{20}$ = 1 J 12″ imperfectly.
L. E. V + 48c 90° = 1 J 12″ better but imperfectly.
Under homatropine R. E. V = $\frac{20}{15}$ (Em). L. E. V = $\frac{20}{20}$ with + 60c 90°.
At 20′ adduction = 10°, abduction = 6°.
R. Glasses R. E. + 60s ◯ prism 2° base in. L. E. + 60s + 60c 90° ◯ prism 2° in.

A month later all redness of the conjunctiva had disappeared. Mrs. R. can use her eyes with the glasses all day, for near work, with perfect comfort.

At one time I seldom used atropine in testing refraction, but mistakes convinced me of the errors of my ways; and now I get the full effect of atropine whenever practicable, and when not so I substitute, if possible, the less efficient homatropine. This case (of Mrs. R.), it seems to me, shows that spasm of accommodation produced a myopia of $\frac{1}{48}$; and changed a hyperopic astigmatism of $\frac{1}{60}$ into a myopic of $\frac{1}{48}$, by advancing the focus of the hyperopic meridian to the retina and the focus of the emmetropic meridian to $\frac{1}{48}$ in front of it; showing an excess of ciliary contraction in the vertical meridian of the muscle = $\frac{1}{48} - \frac{1}{60}$. Dobrowolsky has demonstrated that this unequal contraction of the ciliary muscle sometimes occurs. The case illustrates also the necessity of a mydriatic to determine the best glass for near work.

Case 3.—Mrs. W., æt. 36, is unable to read longer than fifteen minutes without feeling her eyes fatigued.

R. E. V —10c 15° or + 18c 105° = $\frac{20}{60}$ = 1 J 8″.
L. E. V —10c 165° or + 10c 75° = $\frac{20}{60}$ = 1 J 7″.

With the above plus glasses the patient read for an hour without any inconvenience, and they were ordered.

In this case, with the accommodation active the right eye accepted for distance a plus 18 cylinder, and apparently by unequal ciliary contraction (the excess = $\frac{1}{10} - \frac{1}{18} = \frac{1}{22}$) the eye also accepted a — 10 cylinder with axis at right angles to the former, and vision was the same with either glass. Here even in so high a degree of myopic astigmatism as $\frac{1}{10}$ a plus glass is preferred for reading. Granted that the myopic astigmatism occurs during active accommodation and is probably spasmodic. In the left eye the change of a hyperopic astigmatism of $\frac{1}{10}$ to a myopic of $\frac{1}{10}$ is easily due to a ciliary contraction equal to overcoming a minus 10 spherical lens.

Case 4.—Miss S., æt. 16, was sent to me October 7, 1886, by her physician, on account of her headaches, which he thought had some connection with an error of refraction. Miss S. is a large, rapidly growing, neurotic, and not very vigorous young lady, who has suffered daily from headache since childhood, and during the past two years she has been unable to read longer than twenty minutes without pain in her eyes and forehead, lachrymation, and blurring of the type. The eyes have been painful also several times during the day. They are sensitive to pressure.

R. V = $\frac{20}{40}$ = 1 J 12″ + 48 = $\frac{20}{40}$ = astigmatic card.

L. V = $\frac{20}{30}$ = 1 J 12″, refuses any glass.

At 6′ { adduction = 13° / abduction = 10° } V. d = 8° divergence.

Upon fixation within 12″ the eyes diverge.

After atropine three days R. V + 36c 90° = $\frac{20}{30}$.
L. V + 36c 90° = $\frac{20}{30}$.
At 8′ adduction 24°, abduction 15°.

At 12′ adduction 45°; abduction 24; V. d = 12° divergence.

October 14.—With accommodation restored R. V —36c 180° = $\frac{20}{30}$; L. V 36c 160° = $\frac{20}{30}$.

November 14.—After constant current of electricity to the eyes daily for two weeks, the tenderness of the eyes is much less, but the pain and inability to read remain the same. The headache is not relieved.

November 19.—Upon trial can read only five minutes with + 48s ◯ prism 2° base out or in before each eye.

Ordered to wear for distance + 48s ◯ 2° base out each eye, and to read with these glasses every second day. On the alternate days to read with + 36s. To read after each meal, commencing with one minute, and increase each trial by one minute, until reading becomes fatiguing, then to return to half the maximum time attained and increase as before. Prescribed arsenic and fat food.

Three weeks later. Reads twenty-seven minutes with comfort, and equally well with the adducting prisms or with the + 36s glasses. Was told to try reading on alternate days with the prisms reversed, or bases in, and the 36s as before.

Six weeks later. Now reads fifty-four minutes with ease, and equally well with either pair of glasses. The headache is not relieved.

With accommodation R. V — 60c 180° = $\frac{20}{30}$. L. V — 60c 180° = $\frac{20}{30}$. R. or L. V = 1 J 12″ + 60 = 1 J 12″ better — 60c 180° = 1 J 12″ still better, + 60c 90° = 1 J 12″ best.

For the first time in testing binocular vision is shown at 20 feet and adduction = 24°, abduction = 6°, V. D = 4° convergence.

After atropine (grs. viij and ℥j) six times in two days, R. V + 48 + 60c 90 = $\frac{20}{30}$. L. V + 48 + 60c 90° = $\frac{20}{30}$. Was given prisms 2°, 6°, 8°, 10°, 12°, with which (by combining) to exercise the internal and external recti muscles.

Case 5.—Countess de B., æt. 35. Asthenopic.

With atropine R. V — 16s — 48c 90° = $\frac{15}{30}$. L. V — 16s — 48c 90° = $\frac{15}{30}$. These glasses were ordered for distance. With accommodation intact R. or L. V — 48c 90° = 1 J 12″. These glasses were ordered for near work. In a month the patient reports the glasses afford great relief, but her eyes still tire in reading. Her ladyship is advised to rest her eyes when they get tired. Possibly a + 48c 180° might have afforded more relief, especially if near work was usually done within sixteen inches.

Case 6.—J. H. B., æt. 20, school teacher, seen in January, 1882. During the past six months has had pain in his eyes whenever he read for five minutes.

R. V + 48c 90° = $\frac{20}{20}$. L. V + 48c 90° = $\frac{20}{20}$.

With these glasses he read half an hour with ease.

In February Mr. B. reports: A little reading affects the left eye for two to three days; and in September presents himself, saying he can read comfortably with the glasses for only fifteen minutes..

Glasses + 60s + 48c 90° each eye were prescribed, with which he reads without any unpleasantness for an hour and a half.

A year later the patient again returns and reports that the last glasses relieve him more than the previous ones. Still he can read only ten minutes without pain in the left eye. Under homatropine, R. V — 30c 180° = $\frac{20}{20}$. L. V 30c 180° = $\frac{20}{20}$. When accommodation was restored abducting prisms of 2° each were added to the above glasses. With these Mr. B. reads one and a half hours comfortably. These glasses were ordered.

Nine months later: "I can use the spectacles if I do not look away from the book." Recommended to consult Dr. H. Derby, of Boston, as he wished further advice.

Nine months later Mr. B. said Dr. Derby prescribed + 40c 90° ◯ prism 6° base in for each eye. He had tried these glasses for ten minutes only, and thinks he read with more comfort than with the last prescribed by myself.

Case 7.—Frank F., æt. 12, complains that his eyes get tired in five minutes reading. R. V — 42c 90° = $\frac{20}{20}$ = 2 J 5″ to 12″. L. V — 48c 90° = $\frac{20}{20}$ = 2 J 5″ to 12″.

Under homatropine, R. V — 36c 90° = $\frac{20}{20}$. L. V — 60c 90° = $\frac{20}{20}$.

At 20′, convergence = 15°, divergence = 5°.

With accommodation, R. V — 36c 90° = $\frac{20}{20}$ = 1 J 8″. L. V — 60c 90° = $\frac{20}{20}$ = 1 J 6″.

Read with these glasses comfortably for one hour.

A month later Frank reports the eyes give him no trouble in reading. In this instance the astigmatism of the right eye is less before than after the mydriasis, and that of the left eye greater. The crystalline astigmatism of the right under accommodation may compensate for that of the cornea, as Donders pointed out is usually more or less the case. It is noticeable that the findings under homatropine prove to be the best reading glasses.

Case 8.—Mr. R., æt. 37; auditor; asthenopic. Under homatropine, R. V + 36c 75° = $\frac{20}{20}$. L. V + 36c 80° = $\frac{20}{20}$.

Two days later, with restored accommodation, R. V —36c 180° = $\frac{20}{20}$. L. V — 36c 170° = $\frac{20}{20}$.

R. V = 1 J 12″ with difficulty, + 36s better, — 36c 170° still better, + 36c 75° best and well. L. V = 1 J 12″ with difficulty, + 36s better, — 36c 170° still better, + 36c 80° best and well. The above + cylindric glasses with which the patient could read best were given.

A year later Mr. R. says he likes his glasses very much, and is quite relieved of asthenopia. In this case the right eye prefers for reading the + cylinder at an angle of 75°, which was accepted with paralyzed accommodation. This glass varies 15° from the same glass that would have been selected for reading by the oculist from the result of testing remote vision with accommodation intact.

This change in the axis of the cylinder determined for remote vision to a different angle for near vision, is not mentioned so far as I have seen in literature. After first noticing this peculiarity I looked for other instances, and soon found a few. Since then I confess to having neglected to test for it, so cannot say whether the phenomenon is rare. If an eye is tested for distance both with and without atropine, and neither cylindric glass proves satisfactory in reading,

it would be well to test the effect of changing the axis of the cylinder.

I will cite one very typical case in illustration:

Case 9.—In November, 1883, Mrs. G., æt. 37, had been unable for twelve years to read more than half a column of newspaper at a time without producing pain in her eyes. After homatropine, R. V + 60c + 36c 15° = $\frac{20}{20}$. L. V + 60s 36c 165° = $\frac{20}{20}$.

With accommodation, R. V — 48c 120° = $\frac{20}{20}$. L. V — 48c 60° = $\frac{20}{20}$.

The patient can read only five minutes with the latter glasses, and half an hour with the former plus glasses with comfort. The glasses that prove most satisfactory in reading are: R. E. + 36c 180°. L. E. + 36c 150°. Two months later the report is: "The spectacles afford perfect comfort."

In this instance the axis of the reading cylinder varies 15° from the axis of the distance cylinder determined with the right eye under homatropine, and varies 30° from the axis determined with active accommodation. In the left eye the reading glass varies 15° from the distance glass selected with homatropine, and corresponds with the glass selected without a mydriatic. In the above I of course assumed that the plus cylinder for reading would be at right angles to the minus cylinder, *i.e.*, R. E. + 48c 30°, L. E. + 48c 150°.

The change in the reading axis we might assume to be due to the accommodation in which the excessive contraction of the ciliary muscle in the special meridian so alters the figure of the lens as to change the meridian of the real astigmatism of the cornea. In this instance it seems more probable that the eyeball rotates on its visual axis during convergence, possibly on account of excessive tension of the superior oblique. That active accommodation does not account for the result, seems the more probable, since the reading glass for the right eye corresponds more nearly, and for the left eye perfectly, with the distance glass selected during active accommodation.

163 State St.

THE IMPORTANCE OF HYGIENIC MEASURES IN THE TREATMENT OF NASAL CATARRH.

BY THOMAS F. RUMBOLD, M.D.,
OF ST. LOUIS, MO.

Chronic catarrhal inflammation of the mucous membrane of the nasal passages and the cavities connected with them, requires a very different management from that given to other diseases, for the reason that the effects of dress, customs and daily habits of patients have a controlling influence on both the production and prevention of the complaint.

In the early part 1868, I treated a number of patients for catarrhal inflammation of the throat and nasal passages. They were in the habit of frequenting a skating-rink from two to four nights each week. After exercising violently they became exhausted and seated themselves on a bench in the cold air, thus becoming chilled. I was but partially successful in the treatment of their catarrhal complaint, being unable to do more than alleviate their most prominent symptoms, and these only temporarily. These circumstances led me to consult a record I had kept of the history and treatment of a few observant patients who had, at different times during the five years previous, been under my care for the same complaint. These last named patients had noted many of their symptoms and had taken special pains to maintain their general health. I made a record of these cases at different times, but had not, until on this occasion, read them through in succession. After a careful reading and comparison one with another, I was struck with the marked similarity of their statements regarding the causes they ascribed to the aggravation of their catarrhal complaint. The similarity did not end here, but included the care that experience had taught them to take of themselves; the amount as well as the kind of clothing that proved sufficiently protective, and the best means they found to relieve a fresh attack of cold in the head and throat.

The reading of this record deeply impressed me with the paramount importance of hygienic laws in the management of this disease. The humiliating fact that I had failed, time and again, since 1855 (the date of my first systematic attempts to treat this complaint according to our text books), to do more than give a little relief, proved to me that some very important matter in the management of this disease had been overlooked. Indeed, I had made the records spoken of, because of this impression. Under these circumstances, as I reflected on the effects of colds upon the mucous membrane, repeated year after year, and re-called to mind remarks that a large number of other patients had made on this same subject, I was more thoroughly convinced that I had found what had been overlooked by all who had preceded me, namely: that a strict observance of the laws of health was indispensible to a successful treatment, as well as to the prevention of the renewal of the cause of the inflammation, namely, colds. It was not difficult now to see why I had failed in the "skating-rink cases." Since that time I have made it a point to require my patients to strictly observe the laws of hygiene. If they do not do so, I discontinue the treatment at once.

In 1868, I made a series of observations concerning the causes of sickness and death among men and women between the ages of 20 and 40 years. I soon found that most of the ailments and deaths of men arose from the *results of excesses* of various kinds, and the chief of these, was the use of tobacco and stimulants. In the case of women, their sickness and death arose from the results of exposure of various kinds, but principally owing to insufficient clothing. While this is far from being complimentary to man's strength of will to control his appetites, it is as far from being flattering to woman's judgment of her own endurance or ability to resist the injurious effects of inclement weather. One is an evidence of a determination not to be deprived of any pleasure at whatever cost, and the other denotes either a great state of ignorance or an indifference to a very common cause of disease and death.

Every physician who expects to treat chronic catarrhal disease of the nasal passages successfully, must keep in mind the proneness of male patients to commit excesses, and the certainty that almost every female patient is insufficiently and imperfectly clad.

Patients suffering from any kind of disease should so assist their physician as to insure as speedy and permanent a recovery as possible; but with those suffering from catarrhal inflammation of the nasal passages, this assistance is absolutely indispensable; a recovery without it is impossible. A majority of these patients appreciate this, when the subject is fully presented, but the most of them are ignorant of many of the details of the laws of health, or they do not consider them of sufficient importance to give them strict attention. For this reason each patient should, on his first visit, receive instructions on such hygienic laws and sanative measures as are suited to his particular case. These instructions should refer to the following points of conduct:

The importance of avoiding any exposure liable to produce a cold; the best method of protecting the head, neck, body and extremities; the danger of exposure to night air; the course to pursue when a cold has been taken; the proper temperature and ventilation of the sleeping room; the kind of food that should be used; physical exercise and the time it may be taken; the injury resulting from not controlling a gloomy mind and an irritable disposition; the danger arising from cold feet and the way to maintain them warm if they are habitually cold; the necessity of maintaining the nasal and aural passages free of catarrhal secretion, and the most effective and non-irritating means to be employed; the kind of bath that may be used and the manner and time in which to use it; the necessity of abstaining from the use of tobacco and stimulants; the importance of having diseased gums and decayed teeth properly treated by a dentist, and any other hygienic and sanative measures that will tend to regain and preserve health. It will seldom happen that any one patient will need to be instructed in all of these matters, but the greater portion of them must be given to every patient.

The successful treatment of chronic catarrhal inflammation of the superior portion of the respiratory tract, may be likened to the successful suspension of a chain. If any one of its links is broken the chain drops. So with the treatment of this disease. It may be said that one link of the chain is called protection of the head, neck, body and extremities; another link, danger of draughts to night air; another, injury resulting from not controlling an irritable disposition and a gloomy mind; another, abstainance from the use of tobacco and stimulants; and so on through the whole list of hygienic and sanative measures. Two other links belong to this chain, namely, therapeutic and operative measures. If any one of these links is broken, it matters not which one it is, the chain is broken and falls, and the attempt to bring about a recovery is unsuccessful, whether it be the patient's or the physician's fault. My experience leads me to affirm positively that unless patients take such care of themselves, by proper attention to their dress, habits and daily customs as will lessen to a great degree the severity of recurrent colds, the disease cannot be controlled by either local or constitutional treatment, or by both. It is only during the observance of hygienic and sanative measures that therapeutic measures can be successfully employed. It should not be expected that a chronic disease originating solely from repeated violations of the laws of health, can ever be ameliorated while the patient continues to violate these laws.

It is a characteristic of chronic nasal catarrh to establish a susceptibility to renewed attacks of cold in the head. That is, past colds have so weakened the mucous membrane, that it becomes inflamed on the patient being but slightly exposed, while at an earlier stage of the complaint, or when it was still in the acute form, this exposure would not have produced an injurious effect. In the still more chronic stages, the patient will often realize this important but very unpleasant fact. Past experience proves that in the treatment of patients who have been afflicted so long as to acquire this character of susceptibility, the dependence upon medicines alone must result in failure, as it is evident they cannot ward off colds. This is to be done by conforming to rules pertaining to the general health. But it is equally evident, that the observance of these rules cannot give immediate relief to an irritation caused by morbid secretion, or to a pain occasioned by a local congestion; this relief must be the result of remedies locally applied.

Such therapeutic and operative measures must be instituted as will prevent the continuance of the diseased action already set up. If the therapeutic measures are non-irritating and alleviating, and the patient lives in conformity to hygienic principles, the reparative processes of nature will, in a longer or shorter period of time, according to the age and temperament of the patient, restore the inflamed membrane to its normal condition, or to such a condition that the patient will not be conscious of the existance of the disease. Of course it would be preposterous to think that this restoration could be effected in a few weeks or even in a few months, except in young persons. The changes in the mucous membrane, the result of long standing inflammation, are too great for a cure to be effected in so short a time. Time was required for the congestion to produce the disease, and time will be required for the reparative processes of nature to undo or eradicate it, that is, proper care, non-irritative therapeutic measures and time will do it. For this reason, the strictest observance of hygienic measures must not cease with the termination of medical treatment, but must be continued for several years thereafter, or so long as there is susceptibility to take cold. Some patients complain of the severity of this—what they call—rigid mode of life. Can any man or woman give a good reason for not living continually in conformity to well-known and easily obeyed laws of health.

From the foregoing it will be readily perceived,

that, according to the writer's views, the observance of hygienic measures is of far greater importance to the successful issue of a case than are therapeutic measures. From close and careful observation extending back to 1862, I am satisfied that more can be done for these sufferers—including all ages—by the proper observance of hygienic measures alone, than can be cured by therapeutic measures alone, especially if the latter causes the least irritation. I say this to show the high estimation I place on the value of the proper observance of the laws of health.

CONSERVATISM IN GYNÆCOLOGY.

Read before the Gynæcological Society of Boston, February, 1887.

BY HORATIO R. BIGELOW, M.D.,
OF WASHINGTON, D. C.

Over two years ago, I wrote a paper for the Boston Gynæcological Society on "The Conservation of Energy and Conservative Gynæcology," every point of which I can now emphasize with double force; and some time prior to this, I also made a plea for patience in the treatment of oöphoritis and salpingitis. While my own personal experience in surgical gynecology is exceedingly small, I have seen, perhaps, as many operations as most men of my years, and have assisted at a large number. In the conservative treatment of the diseases of women I have had quite an intelligent experience. What I write is based upon a long series of observations, and upon two years of hard work upon the Continent. I have, too, the courage of my convictions; for what I have seen, that do I believe and know. The surgeon, with his brilliant results, lays up for himself treasures upon earth, and brings about him all the luxuries that wealth, reputation and social prestige can give. The patient plodder in conservatism is often out of pocket; goes to his home with many a misgiving and many a heartache. I hope for his sake, at least, that there may be a real, actual heaven, in which his treasures may be laid up, for scientifically, if he has rescued his patient from suffering, he has done more than the surgeon who, in half an hour, has rid her of pain at the expense of some of her organs, and at the risk of her life.

And first, I wish to say a word in regard to uterine tumors: I hold it as axiomatic that *no tumor calls for surgical interference unless it is immediately endangering life.* This brings in the question of hæmorrhage and early operations. Hæmorrhage does endanger life, it is true, but not in the sense which I mean. I hold a hæmorrhage to be *dangerous*, only when it fails to yield to conservative principles of medicine — ergot, etc. Therefore, a myoma that bleeds presents no indications for removal, unless the bleeding be beyond the control of other well known measures. Primary, simple hæmorrhage, of itself does not endanger life, unless it be beyond the control of the medical man. Tumors only bleed when associated with endometritis fungosa, or with a predominant glandular endometritis, or with a glandular endometritis on one side, conjoined with an interstitial endometritis of the other side. It may not be impossible to modify these conditions by local treatment, at the same time that we act upon the capillaries by the internal administration of ergot. At all events, only a small percentage of myomata *endanger life* from *any cause whatever*, and a plea for an early operation cannot possibly find a logical foothold in these cases. In rapidly growing cysts, which endanger life by pressure, and by interfering with those functions which are necessary to life, the question is one of quite another nature. A myoma may endanger life by rapid development (rare), or by blocking up the pelvis and so interfering with the functions of the bladder and rectum, or by undergoing degeneration—but even in these cases, electricity and ergot should be given a fair trial. Every woman who has her abdomen opened subjects herself to a certain fatal risk. The responsibility of a fatal issue no surgeon has any conceivable right to assume, until he has satisfied himself that all other means are useless, and that the woman *must* die unless operated upon. Now a myoma, without alarming hæmorrhage, that grows slowly, and that occasions no discomfort from pressure, surely does not demand a dangerous operation; and yet I have seen many such cases die after a laparotomy, when they probably would have lived many years had they been left alone. Any woman would much rather live on for years as a sufferer, than to have the tumor taken out at the risk of her life. Even in the earliest stages of their development in which a diagnosis is possible, a laparotomy is *always* a dangerous operation, and no surgeon can possibly say beforehand whether such a tumor will assume an alarming form or not. I am convinced that many myomata have been operated upon unnecessarily, and I am equally sure that the careful use of ergot and electricity by intelligent men will render the necessity of laparotomy for uterine myoma an exception. The mania for surgical renown has become such an epidemic that medical men forget that there are tumors and diseases which do better under conservative handling. The mistakes that are made, and the results that are obtained, should be lessons pregnant of thought. But they are not. Death follows death; mistake follows mistake; and still the crowd rush madly on.

I cannot conceive of anything more pernicious than the advice urged by an eminent surgeon: "When in doubt, open the abdomen and find out." It reminds one of Dr. Panglos: "When in doubt take the trick." In the first place, there are few cases in which the competent gynecologist cannot map out the disease—approximately at least. In the second place, he has no right to relieve his ignorance at the slightest risk of a human life. Fortunately for us all, a beneficent one, has prevented any general acceptance of such a doctrine. I have seen some splendid results following upon the use of ergot, and have read of others equally good in Chicago. Apostoli and others are doing first-rate work with electricity. Certainly, with these facts patent, it is simply uncalled for (I dislike using a stronger word) to open the abdomen, unless this practice has failed, and the *woman's life is in immediate danger.*

These thoughts are impressed upon me by long

and close observation. I know of no cure for rapidly growing cysts, or for malignant growths, or soft myomata, but the operative treatment, and it is in these cases that an early operation is demanded—the earlier the better. Here surgery is truly conservative. Another class upon which surgery has gloated, is that in which the adnexa are involved. I have written so much, and at such length, upon this topic, and I have so often demanded a hearing for less "scalpel" and more patience, that I almost hesitate to add anything further. I will not go over the field which I have already traveled, because other men, abler than myself and of more experience, have lately urged the same plan of conservative handling. It is sufficient to say that many cases in which the operation is advised *will* get better by patient, persistent, vigorous treatment. Local applications, rest, treatment, exercise, electricity, Turkish baths, and a subjective condition of environment directed toward the patient's psychic symptoms, will surely, but slowly, bring about an amelioration. I have seen this plan work well, and I know it to be true, even were I not supported by such men as Goodell, Ball and others. This line of treatment is troublesome and is best carried out in a private hospital; and unless the patient has some means, it is quite impossible to practice it properly. It has become almost a conviction with me, that the instances in which a laparotomy is necessary for disease of the adnexa are exceedingly rare.

My experience with these cases, and with this treatment, has been sufficiently ample to allow of my forming an opinion which is entitled to respect. Most earnestly, then, I urge upon the profession to rid themselves of their skepticism, and to try at least such regular, constant surveillance and care. The field is wider than pure surgery, just as praiseworthy and brilliant, and more immortal in its results. Couple with surgery a thorough knowledge of conservatism, and the end must crown the labor.

Leipzig, November 6, 1886.

A CASE OF CARIES OF THE PATELLA FOLLOWING FRACTURE AND WIRING OF THE FRAGMENTS.

BY GEORGE R. FOWLER, M.D.,

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The subject of the present report entered St. Mary's General Hospital on October 24, 1885, with the following history: About twenty years ago she fell and suffered a transverse fracture of the patella. The fracture was treated in the ordinary way, and in due course of time union by ligament resulted, with a distance of about two inches between the fragments. Three days prior to her admission to the hospital, she again fell and ruptured the ligamentous connecting band between the fragments, at the same time breaking up a partial anchylosis of the knee-joint of a fibrous character, which had existed ever since the first accident, twenty years ago.

At the time of her admission, there existed some synovitis and considerable effusion in the knee-joint, the result of the recent injury. When this had subsided it was decided to open the knee-joint, remove the fibrous connecting band, and, after freshening the opposing bony surfaces, to bring the fragments together and secure them in position by means of the wire suture. This was done on October 26. Full antiseptic precautions were observed in the performance of this operation. The wire used was annealed iron, which was brought out of the transverse incision made for the purpose of exposing the fragments, and twisted over a bridge of hard rubber. Drains of soft rubber were employed, these being passed through the soft parts upon the lateral aspects of the joint only, and protruding but slightly into the joint cavity itself. Wood-flour dressings were applied, and the limb placed in a fracture box made of heavy wire cloth.

Everything went well for the first fortnight, when the dressings were removed for the purpose of removing the drainage tubes. The parts were found to be in an aseptic condition, and were re-dressed in the same manner employed at first. At the end of forty-eight hours there appeared a discharge through the dressings which necessitated their removal. An extensive cellulitis of the limb had occurred in the neighborhood of the knee-joint, and suppuration was already in progress. No union of the fragments had taken place, and on removing the bridge over which the wire had been twisted, the underlying soft tissues were found to be in a condition of ulceration, seemingly from the pressure of the bridge. The latter was removed, and the wire twisted closely to the bone through the opening produced by the ulcerative process. The parts were thoroughly irrigated by means of a one to one thousand solution of mercuric bichloride, and again redressed as at first. The cellulitis continued to extend, however, and the parts required re-dressing each day. During this time, however, the temperature was but slightly elevated, although the local distress was considerable. Incisions were made, and soft rubber drainage tubes introduced from time to time in places where pocketing of pus threatened, and thorough antiseptic irrigation practiced once or twice daily, in addition to the use of absorbent antiseptic dressings.

Under the above line of treatment the cellulitis gradually subsided, but no union of the fragments could be made out. On the contrary, as the swelling subsided, it became evident that the patella itself was diseased and the lax condition of the lateral ligaments of the knee-joint led to the belief at one time, that the head of the tibia had become separated from the shaft of the bone. The wire was removed at the end of the sixth week, at which time the drainage tubes were likewise dispensed with, the openings from which the latter emerged becoming reduced to mere sinuses. The point of ulceration over the patella obstinately refused to heal, and the probe detected indubitable evidences of carious bone at the bottom of the opening caused by the ulceration over the patella. On February 15, three months and a half following the receipt of the injury, an incision was made over the patella and the greater portion

of the latter gouged away, it being found to be extensively diseased. In this operation the knee-joint was unavoidably opened, but it was thoroughly irrigated with the bichloride solution. The sinuses, as well as the surface of the ulcer over the patella were curetted by means of Volkmann's sharp spoon.

Nothing further untoward occurred in the history of this case. The sinuses, as well as the ulcerated surface overlying the patella healed readily under the same antiseptic dressings heretofore employed, and the patient left the hospital on May 31. She was able at that time to walk unaided. There was some fibrous anchylosis of the knee-joint, yet motion was possible, to a limited extent. Upon this latter point the patient was perfectly sure that no greater amount of disability was present than had existed prior to the last injury, and following the first fracture of the bone.

Several points present themselves for notice in reflecting upon the history of this case. In the first place, it may be asked with propriety if it were a justifiable procedure, this opening of the knee-joint, and dissecting away the old connecting band of fibrous tissue and wiring together the fragments. My reasons for doing so were, in the first place, the fact that there had existed great disability for twenty years following the fracture in the first instance, and this was in a great measure due to the long ligamentous union existing between the fragments. The patient belonged to a class in whom it was very desirable that as near an approximation to the normal condition of the members of the body as possible should obtain, on account of the necessity of earning their living. The patient was a widow, and relied solely upon herself for support. It was thought that her condition could be made no worse by an attempt to obtain bony union of the fragments, and their could be no question as to the desirability of obtaining the latter. In the second place, it was my intention to search for, and remove if found, any adventitious bands within the joint which might be held accountable for the anchylosis previously existing. I omitted to mention that no such bands were discovered at the time of the operation for wiring the fragments.

It has been my practice to use heavy silver wire for the suture, instead of iron, but in this instance such was not at hand, and the iron was substituted. Whether the oxidizing of the iron could have acted as an irritant is an open question, which I am not prepared to discuss at this time.

The use of the bridge of hard rubber upon which the wire was twisted is a device to which I have resorted upon previous occasions, and have not heretofore thought that it produced trouble by making undue pressure upon the soft parts. I am free to confess, however, in this instance at least, that the ulceration beneath its under surface was a direct result of the pressure of the bridge.

The wisdom of the course pursued in the matter of the treatment of the capsule of the joint, namely, a separate suture of the same, is illustrated in this case. This structure was carefully sutured with a fine continuous suture of catgut, independently of the suture which closed the external portion of the operation wound. To this, no doubt, is due the immunity from destructive inflammation enjoyed by the knee-joint, in the midst of the conflagration, so to speak, which swept over that portion of the limb during the first few weeks following the operation. Immediate and perfect union of the wound in the capsule took place, thus shutting it out from the irritating fluids which infiltrated the tissues surrounding the joint.

Although great care was exercised in the removal of the carious portion of the patella, yet in spite of this the cavity of the knee-joint was invaded. The condyles of the femur, as well as a portion of the head of the tibia, were brought into view. Notwithstanding this, the antiseptic measures were so far efficient as to entirely protect this important articulation from infection, and no harm came from this exposure.

MEDICAL PROGRESS.

Diagnosis of Brain Diseases.—Nothnagel, in a recent article read before the College of Physicians of Vienna, gave the following diagnostic points of brain disease:

1. In brain tumors headache is of very little value in diagnosis; the cerebral substance is not sensitive; the pia mater but little sensitive and the dura mater only, of the cranial contents, is sensitive. Headache in cases of cerebral tumor is explained by tension on the dura caused by the bulk of the tumor.

2. Headache is present in inflammatory processes in the meninges, and more frequently in lepto-meningitis than in pachymeningitis; in lepto-meningitis the headache frequently changes its character.

3. Headache is present in chronic cerebral hyperæmia and chronic anæmia; it is questionable whether anæmia alone is the important element in chlorosis, as most marked cases of pernicious and intensive anæmia are caused by carcinoma in which headache is absent. Headache is rare in insular multiple sclerosis; in cerebral abscess its presence and character are variable. The location of the headache gives no certain diagnostic point as to the location of the lesion, though in general it may be said that usually the lesion is where the headache is.

Vertigo, though common in various cerebral diseases, is of little importance; when it is excessive and accompanied by incoördination, as in diseases of the crura cerebelli, it has decided import.

Vomiting is rarely of much value in diagnosis; it aids chiefly in the location of lesions. It may be present in cases in which the amount of blood in the brain is abnormal, and an irritation of the centre of emesis in the medulla oblongata exists. We are aided by this symptom in diagnosticating lesions of the tissue in the posterior fossa of the skull; *e.g.*, tumors originating in the cerebellum press upon the medulla; or tumors of the medulla or pons.

Fever is an important symptom in but few cerebral

diseases. The highest temperature is present in meningitis, especially in its infectious form. But as peritonitis without fever is often seen, so meningitis may run its course without marked rise of temperature. Fever occurs in cerebral abscess and septic phlebitis of the cerebral sinuses; it has then more often the characteristics of septic fever with pyæmic chills, and does not depend directly upon the phlebitis, but upon pulmonary embolism. Fever also occurs in the course of progressive paralysis. The pulse gives no certain criterion for the diagnosis of a given cerebral disease. It is often, however, of value in the abnormalities of its rhythm in beginning meningitis, in the form of regularly occuring arythmia (first described by Nothnagel), where a certain periodicity in the variations of the pulse frequence occurs; the increased number of beats endures but a few moments, and is caused by an irritation of the pneumo-gastric nerve. The respiration gives no information in the diagnosis of brain diseases.

As to disorders of speech, aphonia is seldom present and the location of the lesion which could cause it, in the medulla oblongata, is such that death generally results speedily in these cases. Speech is affected most often in progressive bulbar paralysis, and frequently in multiple sclerosis in patches. Speech is also implicated in progressive paralysis when the origin of the hypoglossus is affected; also in cortical disease of the lower portion of the central gyrus.—*Wiener medizinische Presse*, No. 13.

Antifebrin.—Eisenhart (*München. Med. Woch.*, No. 47, 1886), tested the therapeutic action of this drug in thirty cases in the medical clinic of Ziemssen. The activity of the drug usually manifested itself two hours after its administration, sometimes with appearances of collapse, in more than half of the cases with copious perspiration, and in a few cases produced no lowering of the temperature. The apyrexia produced by it lasted generally six hours. It acted as readily when administered by enema as by the mouth. In a single case of typhoid fever it produced over the entire body a papulose eruption of moderate size, which disappeared after two or three days' duration under the continued use of antipyrin, only to break out anew. Cahn and Hepp (*Berlin. klin. Wochensch.*, 1887, No. 1 and 2), have published the results of a new series of tests of antipyrin in sixty cases of various kinds of fever. They reaffirm that it is a strong and sure antipyretic, one that can be used in small doses and is relatively free from coincident undesirable effects. Of these undesirable effects they have observed, at times, a fall of temperature below normal, a chill as again the temperature rises, and sometimes after its effects pass off a rise of temperature above that previously observed in the case, also occasionally, a red miliary eruption and sometimes a cyanotic appearance. They noticed a decided increase in the quantity of urine and fall in its specific gravity, together with increased thirst in severe cases. Parallel with the fall in temperature occurred a lessening of the pulse frequency and an increased tension of the vessels. Moreover they call attention to the quieting effect of the drug. By all observers the dose most frequently used is 25 gms. (gr. iv). When this dose did not give satisfactory results Cahn and Hepp repeated it at intervals of one-half to one hour; .5 gms. (grs. viii) doses they gave in the same way, and administered the drug in single doses of 75 to 1 gm. (gr. xii to gr. xv). Small repeated doses appeared in rather severe cases useless, while single large doses produced prompt effects. They never used per day more than 2 gms. (grs. xxx), but think that much more might be given with safety. The drug was administered in watery solution, in urine or wafers. In regard to the undesirable coincident effects of antipyrin Heinzelmann (*Münchener med. Wochenschr.* 1887, No. 3) adds that he has observed after sweating, once partial deafness, once mydriasis, but never vomiting or eruptions upon the skin.—*Centralblatt für klin. Med.* 1887, No. 17.

The Value of Hæmorrhage in Treating Wounds.—Taruzza publishes a note to show that hæmorrhage from wounds, unless due to lesion of large vessels or in excess, does not interfere with primary union. He does not think it necessary to follow strictly the rule to secure complete arrest of hæmorrhage and to apply firm compression. He relies on perfect disinfection of the bleeding surface, as far as possible, by means of weak solutions of carbolic acid or mercuric chloride. After this he leaves the cavity of the wound full of blood, the edges being accurately sutured, and without fear that primary union will not result. From his experience he formulates the rule: "In wounds perfectly disinfected and free from foreign substances effusion of blood is not a source of danger, but the reverse, as the effused blood fills the wound-cavity perfectly, preventing the formation of empty spaces, and making compression and drainage superfluous; and the organization of the clot favors union." He is opposed to the drainage tube, thinking that it increases risks of sepsis, and may remove from the wound fluids which, when aseptic, may be useful by reabsorption.—*Gazetta degli Ospitali*, April 13, 1887.

Albuminuria in Diabetes.—Dr. A. Pollatschek, of Carlsbad, has published (*Zeitschr. f. Klin. Med.*, xii., 4) some statistical results of the systematic examination of diabetic urine for albumen, with a view to determine whether the occurrence of the latter varies in proportion with the amount of sugar. He found that out of 1187 specimens containing sugar, in amounts varying from traces to as much as 5 per cent., there occurred more or less albumin in 437. The percentage (37) was almost the same, when reckoned on the cases examined in 1885, as on those of 1886, showing a curious uniformity. By grouping the specimens of urine according to their richness in sugar, he shows that there is no constant relation between the amount of albumen and of sugar—the lowest number of albuminurics (29.1 per cent.) occurring in cases of urine with a minimal quantity of sugar, and the highest (43.8 per cent.) in urines having from 2 to 3 per cent. of sugar.—*Lancet*, April 23, 1887.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

The Editor of this Journal would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, MAY 28, 1887.

RESPIRATORY THERAPEUTICS IN PHTHISIS.

As the active treatment of phthisis is now attracting so much attention, some notice of a valuable contribution to the subject made by Dr. Lawrence J. McNamara, at the May meeting of the New York County Medical Association, will no doubt be received with considerable interest. His paper was entitled, "Respiratory Therapeutics in the Treatment of Phthisis Pulmonalis," but he limited his remarks to one division of the subject: the local treatment of phthisis by medicinal agents applied to the interior of the respiratory tract in finely divided particles. While he may be thought too sanguine, Dr. McNamara thinks that from his experience with this plan we now have a proper and scientific method of treating phthisis, especially in hospitals.

To Laennec's insistance on the essentially tuberculous nature of phthisis is to be ascribed the determination of its specific character; and Koch's isolation of the bacillus seems to be but the legitimate outcome of the work of Laennec and his followers. The importance of the bacillus and the infectious nature of the disease being admitted, the necessity of using means to retard the further development of the organism, or of destroying it, and the placing of the exposed person in an atmosphere devoid of its presence, at once become apparent. The acceptance of this idea of infection by the profession in general would be the dawning of a new day in the treatment of phthisis. The possibilities of relief and cure are greater, and the idea of prophylaxis assumes prominence. The changing of an infectious pulmonary discharge to one devoid of dangerous elements is the logical sequence of putting the theory into practice. But Dr. McNamara does not consider the antiseptic treatment of phthisis the only form of treatment worthy of application to the diseased lung. He believes that it is at present a necessary and most important means of modifying the course of the disease; but the physical conditions caused by the extension of the inflammatory irritant naturally call for other methods of treatment.

While the greater number of appliances for producing sprays are of no use, it must be admitted that we can obtain a spray sufficiently fine to pass the larynx and penetrate beyond the larger bronchi. For almost two years Dr. McNamara has used an apparatus which has given him great satisfaction, a description of which is to be found in our New York letter. The spray produced by this apparatus consists of a central stream of very great attenuation, the larger particles of the atomized fluid being projected against the sloping sides of the globe, and being condensed fall as drops into the original solution, so that they do not escape through the mouth piece. The mist which passes through the mouth-piece has not sufficient momentum to cause its entire condensation, and does not wet the hand when placed before it. Ordinary inspiratory efforts will carry the spray into the lower respiratory passages. The results obtained with this apparatus certainly warrant a more general use of the method. But, though the patients were relieved of their symptoms, and the evidence in many cases pointed to a cure of the process, the scanty expectoration still contained bacilli, except in one case, in which the vesicular murmur returned, and both the râles and bacilli disappeared.

There are a number of difficulties in the way of a systematic use of such methods of treatment in private practice, and when possible the patients should be treated in special institutions, where the methods can be combined with the pneumatic method, when the physical condition of the patient calls for the use of the latter. Again, as remarked by Dr. Janeway in the discussion of Dr. McNamara's paper, it is difficult to carry out any plan of antiseptic treatment that will fully reach the affected parts, and it is also difficult, in many instances, to appreciate the amount of disease present. By inhalation methods we may be able to benefit a certain proportion of cases; but the conditions present are often such that the application is carried to the sound tissues of the lung rather than to the affected parts. It is well known how much difficulty there is in favorably affecting a case of tuberculosis when the parts involved can be readily reached; as, for example, in tuberculous ulcers of the mouth, gum, tongue or legs; and the

difficulty must necessarily be much greater when the diseased part is as inaccessible as the lung. But inhalations may do good by arresting the process from their effect upon the neighboring sound tissue. Again, in cases of chronic phthisis attacks of capillary bronchitis and broncho-pneumonia sometimes occur, making them appear like acute tuberculosis; and under these circumstances the violent symptoms usually subside in a short time. There are, then, many cases in which one might be led to suppose that the tuberculous process is much more advanced in the lungs than is really the case; and it is possible that some of the cases reported as being so much benefited by the Bergeon treatment are of this character.

While it may be objected that such measures do not destroy the bacilli, or cause them to disappear, the counter-objection may be raised that, so long as the other symptoms improve and disappear, we need not concern ourselves too much with the bacilli; and at present it may be fairly questioned whether the bacilli will not finally disappear from a case which is kept at a high standard of improvement. And certainly, with our present knowledge of germicides, it would not be wise to make vigorous efforts to destroy the bacilli at the risk of injuring the patient by irritants. And while it may still be true that our main reliance in the treatment of phthisis is in constitutional remedies, including the selection of a suitable climate, other measures are not to be neglected; and in a large number of cases change of climate is, for pecuniary reasons, out of the question.

THE INFLUENCE ON LABOR OF PRESSURE OVER THE SACRO-SCIATIC FORAMEN.

Can we influence the mechanism of labor by external pressure over the sacro-sciatic foramen? is the question asked by Dr. A. F. A. King in a communication in the *American Journal of Obstetrics*, of May. While examining some cadavers he found that such pressure produced an elevation or protrusion at the same point in the interior of the pelvis. Having removed the uterus and appendages, he anointed the pelvic cavity with vaseline, and placed in the pelvis a good-sized, recent fœtal head, also anointed with the vaseline. The head was placed low down in the pelvic cavity, with the occiput towards an acetabulum, and the forehead towards the opposite sacro-sciatic synchondrosis. Pressure with the finger-ends over the sacro-sciatic foramen towards which the forehead was directed easily caused the head to rotate, bringing the forehead to the sacrum and the occiput to the pubis.

Could the same thing be done on the living subsubject? When rotation fails to take place during labor can we expedite it by this pressure? asks Dr. King. Such external pressure would cause the part of the fœtus in contact with the foramen to move in a *posterior* direction towards the hollow of the sacrum. "If it is found to be of any value, the pressure should be made in the left occipito-anterior position of a *head* presentation, and in the left mento-anterior position of a *face* presentation only upon the right sacro-sciatic foramen, so as to cause the *occiput* in the one case, and the *chin* in the other, to come towards the pubis; while in the right occipito-anterior and right mento-anterior positions of the same presentations, respectively, the pressure must be made upon the *left* sacro-sciatic foramen; and so of the other positions and presentations." When the vectis or forceps was applied on the dead subject it was easy to feel the end of the blade on the outside, through the tissues covering the foramen; and pressure upon the instrument at this point would distinctly move the handle and cause rotation. It was also found that when the lower extremities of the cadavers were bent back as far as possible, thus bringing them into the same relation with the trunk as would occur in kneeling, the heels just reached the sacro-sciatic foramina; and when they were firmly pressed against the tissues over the foramina the same elevation was made on the interior of the pelvic cavity, and the same movement of the head was produced as by digital pressure. It is then fair to ask—Would a kneeling posture during labor, with the heels at the points indicated, expedite labor by promoting rotation?

While it may be said that the tonicity of the muscular and other structures covering the foramina differ in the living and dead subjects. Dr. King states that pressure over the foramen in the *living* will also produce an impulse perceptible by the hand placed over the abdomen, and even by the eye, if the abdominal muscles be sufficiently relaxed. He also states that a moderate degree of rotundity does not make any great difference in the result as compared with the experiment on emaciated subjects.

Verification in actual cases of labor of what these facts lead us to hope for will be awaited with interest. It is certainly possible that the conversion of the soft internal depression of the sacro-sciatic space into a solid elevation, and maintaining this during a few labor pains, may have a great deal of influence in promoting the normal movement of the presenting part.

MEDICAL LEGISLATION.

The bill before the Illinois State Legislature proposing several amendments to the law for regulating the practice of medicine that has been in force since 1877, has been defeated. Precisely what the nature and scope of the proposed amendments were, we do not know, not having seen a copy of the bill.

There is another bill before the Legislature, having for its leading object such amendment of the existing law in this State, as to secure a more humane and rational mode of proceeding for the commitment of the insane to asylums, or otherwise depriving them of their personal liberty. It is well known that the State of Illinois enjoys the unenviable honor of having a law which requires every person supposed to be insane, to be arrested and brought before a court and jury, for the purpose of determining their sanity or insanity, before they can be received in any asylum or institution for the cure of the insane, in this State.

The law makes no exceptions, and the mother who becomes insane during her confinement after childbirth, and all other cases of acute general insanity, are compelled to go through the same inhuman process of exposure in open court and the mockery of a trial before a jury of six or twelve men, only one of whom is required to have any semblance of medical knowledge. The medical profession of the State have not ceased to protest, on all proper occasions, against the law, since it was enacted several years ago, under the delusion that it would lessen the danger of having parties fraudulently deprived of their liberty by the collusion of friends. This earnest and persistent opposition to the law as it exists, arises from no personal interest that the physician has in the matter, but from the instinctive horror he feels seeing men and women phrenzied with maniacal delusions arrested, sometimes locked in cells two or three days waiting for trial, and then brought into a court-room, subject to the gaze of a crowd of spectators; all the time conscious, as he is, that the proceeding not only does not add one particle to the safety of the patient, but often adds to the danger of making the insanity permanent or early fatal in its results. Three years since the Illinois State Medical Society, through an able committee, framed a Bill proposing to so amend the law that cases of acute general mania could be committed to proper asylums by the Judge of a court of competent jurisdiction on the sworn testimony of two physicians, as is done in all other civilized countries, while the trial by jury in open court was still left for all such parties as might ask for the same, or any one of whose friends might ask it for them. The Bill was presented to the Legislature then in session, but was not acted upon. We understand that a bill is now before the two branches of the Legislature with the same amendments regarding the proceedings on commitment of the insane, with some additional sections relating to other points that we have not seen. At the recent meeting of the State Medical Society, May 19, in this city, the following resolution, offered by Dr. N. Bridge, was passed unanimously:

Resolved, That this Society heartily indorses the provisions of the bill now before our Legislature providing for the commitment of the insane in certain cases without trial by jury, and asks the Legislature to enact these provisions at least.

It is to be hoped that the members of the present Legislature will not allow a final adjournment without complying with the reasonable and humane request contained in this resolution.

Professors M. Semmola and Durante, of Italy, have been designated as representatives in the International Medical Congress to be held in Washington, in September next.

SOCIETY PROCEEDINGS.

AMERICAN SURGICAL ASSOCIATION.

Eighth Annual Session held in the Army Medical Museum, Washington, D. C., May 11, 12, 13 and 14, 1887.

WEDNESDAY, FIRST DAY.

MORNING SESSION.

The Association was called to order by the President, Dr. Hunter McGuire, of Richmond, Va., who delivered the *President's Address* on

THE NEED AND VALUE OF COÖPERATIVE WORKS IN SURGERY.

Nearly every advance in whatever is accomplished by human enterprise is secured by coöperative effort. Advance in surgery can be more surely made by Associations such as ours than by any individual efforts of man. The difficulties which beset us are numerous. Disease presents problems difficult of solution. We cannot apply to the human machine the fixed rules by which inanimate bodies are governed. Besides this, it is necessary to get rid of the rubbish with which we are too often flooded by ignorant, but ambitious contributors. This is an easy task, but it is more difficult to know when to reject the material presented by skillful but unscrupulous workers, who to gratify their own personal vanity, make false returns of their labors. For the developments yet awaiting us, we must be indebted to the contributions which every patient and conscientious laborer may bring to the common stock of ascer-

tained knowledge, and we shall accomplish this best by the cultivation of a broad and generous appreciation of each others work, from which every particle of envy at the success of others has been eliminated; by the hearty commendation which we give to all who have enlarged the boundaries of surgical science, or who have improved its art.

In concluding his address the President made the following suggestions:

1. The formation of a business committee to prepare the work of the Association. The committee should select two general subjects in surgery to be discussed at the morning sessions of the first and second days.

2. The address of the President should be limited to half an hour; readers of papers to the same length of time, and those who take part in the discussions to fifteen minutes.

3. I venture to suggest the abrogation of Article 9 of the Constitution. This will allow us to admit to fellowship some men in this country who are really needed in the Association. While I believe in the rigid observance of the Code of Ethics of the American Medical Association, and the absolute necessity of its enforcement in that body, there is no need for it in our Association. The only code that we should have is scientific work.

4. That the report of the committee with reference to the American Congress of Physicians and Surgeons be adopted.

5. That the Conststitution be so amended that propositions for membership shall lie over for one year. The qualifications for fellowship should be age, experience in surgical work, and scientific attainments with general culture.

A committee of five was appointed to take into consideration the suggestions offered by the President. The committee consists of Drs. S. A. Gross, C. H. Mastin, D. W. Yandell, Moses Gunn and C. Johnston.

The Association then went into Executive Session.

Afternoon Session.

Dr. F. S. Dennis, of New York, read a paper on

Exploration of the Bladder, by the Supra-pubic Method.

The time is not far distant when practically the only two operations will be supra-pubic lithotomy and litholapaxy. Supra-pubic lithotomy is simple in technique, safe in execution, free from injury to the reproductive organ, radical in results, curative in application and brilliant in statistics. The many serious accidents attending the lateral operation are avoided.

Technique of Operation.—For a few days before operation a milk diet should be employed. The day previous to operation the bowels should be moved with castor oil. The morning of the operation an enema should be used so as to empty the rectum for the introduction of the rubber bag. The parts should be washed with antiseptic solution. After the patient has been etherized, the surgeon should introduce a rubber bag into the rectum so as to be above the internal sphincter. Into this twelve ounces of warm water is to be introduced. This quantity will have to be increased or diminished according to circumstances. The danger of rupture of the rectum in elderly people and young boys should be borne in mind. The urine should be withdrawn and six ounces, more or less, of an antiseptic solution introduced into the bladder. The catheter may be left in the bladder and stopped with cork, and this will serve as a guide to cut upon. The distension of the rectum and bladder increases the distance from the pubes to the anterior cul-de-sac of the peritoneum to three inches. The incision should be made in the median line, and should extend for three or four inches above the pubes. When the transversalis fascia is reached its use of retractors on the principle of the eye speculum facilitates the operation. Having divided the fascia the end of the catheter can be felt and cut upon as a guide. The bladder may then be seized with two tenacula and opened. Where free exploration is desired, sutures are introduced on each side of the incision. The stone is removed either with the fingers or forceps. The bladder may then be washed out. A catheter should be introduced through the urethra, but not left longer than twenty-four hours, on account of the danger of exciting traumatic urethritis. In the majority of the cases the wound of the bladder should be left open. In cases of calculi, the condition of the tissues is such that primary union is unlikely. In certain other conditions, such as rupture, the wound may be closed, for here the condition of tissues is different. The abdominal opening is to be closed and a tube introduced.

This operation is indicated (1) for hard, large calculi, and in persons suffering with paraplegia and deformities rendering lateral lithotomy difficult; (2) for removal of certain foreign bodies such as hair-pins, etc., and for the treatment of chronic cystitis; (3) in cases of tight stricture, fibroma of prostate, tumors of the bladder and for rupture. In its extraordinary simplicity, its reduced mortality, its freedom from danger and safety for the general practitioner, it compares well with litholapaxy.

Dr. Dennis had collected 124 cases of supra-pubic operation for stone done since 1879. Previous to this date, the rate of mortality was 30 per cent. Since then the mortality has been reduced, there being eighteen deaths, a mortality of 14 per cent. Seven of these deaths may be justly excluded, giving a mortality of 9 per cent. According to Sir Henry Thompson's statistics, the death rate from the lateral operation is 12 per cent. According to the same authority the mortality of lithotrity is 6 per cent. In considering the mortality of this operation, two facts are to be considered. The mortality may be improved by more rigid antiseptic precautions. The second fact is, that the operation has been limited to the largest stones. When the smaller stones are included, the death rate will be reduced.

Dr. John H. Packard, of Philadelphia, read a paper on

SUPRA-PUBIC CYSTOTOMY FOR OTHER PURPOSES THAN THE REMOVAL OF CALCULI.

In 1883 he removed, by supra pubic cystotomy, a piece of shawl pin five inches in length, which had been passed through the urethra. Since then he has done this operation a number of times. In cases of retention of urine from stricture, where a fair attempt to pass an instrument fails, he draws the urine by aspiration. In a short time an instrument can usually be passed. He did not recall a case in which it was necessary to repeat aspiration. The following cases were cited: July 7, 1855, Mr. G., 85 years old, had retention due to large prostate. The bladder was greatly distended. The urine was drawn off with a long catheter, but he desired more permanent relief. Supra-pubic cystotomy was performed, and a glass ovariotomy tube bent like a tracheotomy tube, was introduced. The patient improved decidedly, but suddenly died July 9, from heart failure, the result of sudden exertion.

J. C., age 43, came under observation January 21, 1885, at the Pennsylvania Hospital, with a history of retention, the result of old stricture. The bladder was greatly distended and no instrument could be passed. There was frequent chills and profuse sweats. The next day Dr. Thos. G. Morton made a perineal incision, opening an abscess; the catheter then passed into the bladder. The following day the bladder was again distended. Supra pubic incision was then done. A catheter passed through the abdominal opening and the neck of the bladder escaped through the perineal wound. On February 7 a large mass of slough came from the abdominal wound. The patient then rapidly improved, and was discharged cured April 21st.

H. F., 43 years old, had retention for four days. The penis, scrotum, and skin of abdomen were swollen and rigid. Free incision was made. The bladder was opened and a tube introduced. On June 4 an instrument was passed by urethra. On July 13 the patient was discharged and has continued well.

Mr. S., age 63, admitted with enlarged prostate and frequent attacks of retention. August 13, 1886, supra-pubic incision was performed and the bladder opened. Although the condition was improved, the patient died of exhaustion August 29.

W. E., age 70, was admitted April 24, 1887, with retention due to enlarged prostate. Supra-pubic cystotomy was performed and a large quantity of putrescent urine removed. A rubber tube was passed into the bladder. The urine contained albumen to the amount of one-half its bulk. Granular casts were also found. A typhoid condition developed and the patient died on the fourteenth day after admission.

R. M., age 40, was admitted the same day. He had double inguinal hernia and double hydrocele. He had passed no urine for fourteen hours. Catheterization was attempted without success. Supra-pubic incision was then performed and a rubber tube introduced. He has done well since then and is beginning to pass some water by the urethra.

Method of Procedure.—The fullest antiseptic precautions should be observed in these cases. In most of the cases on which the author had operated the question whether or not the bladder should be distended had not presented itself, as the bladder was already over-distended. The bladder should never be more than moderately distended, not more than six or eight ounces of a boric acid solution being employed. To retain the water in the bladder a convenient method is to bend the urethra on itself and hold it in this position. There seems to be more advantage and less risk from distension of the rectum. Many writers recommend that the bladder be steadied by an assistant, but this was regarded as needless and objectionable. The incision through the skin should be free enough to give ready access to the deeper parts. When the bladder is reached it is desirable to secure it in some manner before puncturing. For this purpose a small double hook may be used; a small tenaculum may answer. When a large opening is to be made a double ligature is perhaps the best device. In cases of retention the curved trocar and canula should afterward be substituted by the tube. The speaker's custom is to make the opening in the bladder just large enough for the tube. The proper point for making the opening seems to be about at the middle of the exposed portion of the wall of the bladder, which would be about one inch or one and one-half inches above the pubes. The drainage tube should go well into the bladder and have lateral openings only near its extremity. The external end may be closed with a cork or clip, or by bending it. In old men with atonied bladders he had sometimes used glass tubes. If a large opening has been made in the bladder it may be closed around the tube with a few catgut sutures. The tendency of the wound is to close quickly except where the tissues as well as the general system are in bad condition. The edges of the wound in the skin can be apposed with sutures of catgut or silk-worm gut.

In concluding the speaker asked "If the supra-pubic section had been first tried, as generally adopted, is it likely that the perineal operation would have been afterwards performed on account of its greater ease, simplicity and efficiency?"

Dr. A. Vanderveer, of Albany, N. Y., read a paper entitled

TO WHAT EXTENT CAN WE CLASSIFY VESICAL CALCULI FOR OPERATION? WITH A REPORT OF CASES, AND REMARKS ON THE DIFFERENT METHODS EMPLOYED.

He gave the detailed histories of forty-one cases which he had operated on. There were seven cases of perineal lithotomies with two deaths and five recoveries, the former being very old men with large stones. Of attempted litholapaxies and an immediate perineal lithator there were two cases, both resulting in death, one occurring in the speaker's practice, the other in the practice of a friend. Both were severe cases of large stone, the patients presenting a history of much suffering through many years. Of dilatation of the urethra in the female and washing out of fragments or removal of stone entire, there

were six cases, all recovering with no complication whatever. Of urethral calculi in the male there were four cases, all recovering. Of simply lithotrity in the male, there was one case, followed by recovery. Of attempted litholapaxies, but not completed, there were four cases, three ending in death, and one, the stone hiding in a sac, later underwent perineal lithotomy and recovered. One was probably complicated with some form of tumor of the bladder and a history of chronic disease of the kidneys. One was a case of chronic alcoholism, one was complicated with sacculated bladder, and the last two were cases of surgical kidney of the very gravest kind. Of the litholapaxies in the male there were eighteen patients having twenty-two operations, four requiring a second operation. Of the number, sixteen recovered and two died. Of the latter, one after the first and one after the second operation.

With reference to supra-pubic lithotomy, the author said that with the excellent results we are ever likely to obtain from rapid lithotrity, the operation must necessarily deal with severe cases of large, and in some instances sacculated, stone. He did not believe that we should ever expect from it as great a per cent. of recoveries. A table of reported cases of supra-pubic operations was given, showing that in 142 adult cases, a mortality of 22 per cent.; in children under 15 years of age, 113 cases gave a mortality of 10.5 per cent.

The operation of litholapaxy is certainly indicated where the stone is small or of moderate size, and, contrary to the teachings of a few years since, can be done in very young male children with proper instruments. In male adults, if there is severe chronic cystitis, no matter what is the size of the stone, the supra-pubic or some other form of perineal lithotomy seems best. The cystitis can then be successfully treated and there is less danger of a reformation. The speaker thought that it would be found by future statistics that cystitis has much to do with the necessity for a second or third operation. He thought that contracted bladder in the male with adhesions had not received the attention which it demanded. This must in some instances embarrass supra-pubic lithotomy. On anatomical grounds the supra-pubic operation will be much simpler in the youth, as the bladder is much higher in the pelvis at this time of life. In girls rapid dilatation or supra-pubic lithotomy will undoubtedly reach all cases. In adult women vaginal lithotomy may be added.

The discussion of these papers was postponed until Thursday morning.

Thursday, May 12.—Second Day.

Morning Session.

The committee of conference with reference to the

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS

reported that they had attended the meeting of conference held in Washington, September 24, 1886. At their meeting the following resolutions were adopted:

Resolved, 1st, That it is desirable that the following special Societies, the American Surgical Association, the American Ophthalmological Association, the American Otological Association, the American Neurological Association, the American Laryngological Association, the American Gynæcological Association, the American Dermatological Association, the American Climatological Association, with the Association of American Physicians, shall arrange for a conjoint meeting in the city of Washington, September, 1888, and subsequently at intervals of three years at the same time and place.

2. That this arrangement shall not interfere in any way with the autonomy of each special Society, and that each Society shall retain the right to withdraw at any time from this conjoint scheme.

3. That the special feature of the meeting shall be the conjoint assemblage of the special Societies on two evenings during the session; on one of which there shall be an address delivered by the President of the conjoint meeting, and on the other there shall be communications by a referee and co-referee on some subject of general professional interest.

4. That each special Society approving this report is invited to appoint one representative (with an alternate), and that the representatives so appointed shall constitute an Executive Committee to serve for one year, with power to select such officers for the first conjoint meeting as may be deemed necessary; to propose a programme for said meeting; to make all other arrangements, and to prepare and submit a plan or organization for future meetings.

5. That all expenses connected with the conjoint sessions shall be apportioned equally by the Executive Committee among the special Societies participating.

Owing to the views entertained by the committees of the Ophthalmological and Dermatological Associations with regard to the interval of times of meeting, they abstained from voting upon the first resolution. The report was adopted, and Dr. C. H. Mastin, of Mobile (with Dr. J. Ford Thompson, of Washington, as alternate), was appointed as the representative of the Association.

The discussion of papers read on Wednesday was then taken up.

Dr. W. T. Briggs, of Nashville, said that one of the speakers in his paper held that the time would come when supra-pubic lithotomy and litholopaxy would practically be the only operations performed for the removal of stone. The surgeon should have all operations at his command and should select the one adapted to the particular case. In certain cases, such as large stones or deformities of pelvis and lower extremities, supra-pubic lithotomy is undoubtedly the best operation. There is, however, no reason why, in ordinary cases of medium stones, the perineal operation should not be adopted. The best operation, he thought, was one through the median line. The neck of the bladder is usually resistant, but by making a lateral incision of three lines on each side of the prostate gland, with gradual dilation, the opening can be enlarged to an extent sufficient to permit the removal of any stone that should be removed through the perineum. There is no reason why fragmentization of a large stone should not be combined with the medio-lateral operation. He held that incision in the manner mentioned with the removal of all stones at once, would have a less mortality than litholapaxy. His first seventy-four cases were operated on by this method without a death. He then had two deaths, in one a pelvic abscess complicated the case, and in the other there was scrofulosis. Forty-six cases were then operated on with one death. This case died three months after operation of general tuberculosis, with wound

ununited. In the last two years he had operated on six old men with an average age of 66 years, all recovering.

Dr. D. Hayes Agnew, of Philadelphia, said that we cannot commit ourselves positively to any one operation. The median operation is undoubtedly the safest operation through the perineum. The only damage likely to be done is in extraction, but this can be avoided by nicking the neck of the bladder which admits distension to almost any extent. Where the stone is large, and yet is one which should come through perineum, an incision may be made on each side. Drainage is more readily effected by the perineal operation. In cases of large stone the high operation is the best.

Dr. J. R. Weist, of Richmond, Ind., said that he had performed the operation described by Dr. Briggs in eight cases, all of which recovered. With one exception all the patients have been old. One case was 20 years of age, and a mulberry calculus weighing 520 grains was removed. The next youngest age was 59 years old, eight stones being removed. In another case 72 years old, twenty-two stones were removed. From the accounts of the supra-pubic operation given yesterday, he inferred that the operation is more difficult of performance than the one described by Dr. Briggs.

Dr. H. H. Mudd, of St. Louis, said that the use of litholopaxy in the majority of cases takes the place of perineal operation. The supra pubic operation is of service for the removal of certain large stones and for exploratory purposes. It must be borne in mind that the existence of contracted bladder with adhesions will render the supra-pubic operation difficult or impossible.

Dr. J. Collins Warren, of Boston, had seen two cases of the supra-pubic operation during the past year, both in the practice of others. One was for stone and the other for tumor. There seemed to be no difficulty in the operation. Both cases recovered without a bad symptom.

Dr. Theodore Varrick, of Jersey City, operated two years ago on a boy 14 years of age, who had symptoms of stone for seven years. He began with the left lateral operation, but had to carry the incision to the right side. The stone removed weighed seven ounces and two scruples. There was no perceptible laceration and the boy recovered completely.

Dr. David W. Yandell, of Louisville, said that he had performed ninety-two operations by the perineum, eight by lithotrity, and six by litholopaxy. He had seen two supra pubic operations, but thought the operation no easier or better than those mentioned. There were seven deaths from the lithotomies. In none of the cases was there any return of the stone. In the eight lithotrities there was a return of the stone in two cases. In the six Bigelow operations there was a return in two cases.

Dr. John B. Roberts, of Philadelphia, considered the high operation as certain to be a very important one. If we wish to make a free exploration of the bladder the high operation is better than the one through the perineum. In cases of stone operated on by a surgeon without special experience in this direction the supra-pubic operation is the safer. With reference to Dr. Packard's suggestion to treat retention of urine from stricture by supra-pubic cystotomy, he said that his view was that persistent efforts should be made to introduce a filiform bougie which will drain off the urine. Simple aspiration above the pubes will give a chance for the passage of an instrument through the urethra in two or three days.

Dr. J. E. Michael, of Baltimore, said with reference to retention due to stricture or prostatic disease, that supra-pubic aspiration seemed to be all that was necessary, and under proper precautions is safe. Then, in prostatic cases the use of a soft catheter will accomplish all that can be done, without some radical operation is attempted. In cases of stricture this must be treated. As to the advisability of the supra-pubic operation for exploration, for some cases of prostatic enlargement, and for exceptional cases of foreign bodies, there can be no question.

Dr. J. Collins Warren, of Boston, read a

STUDY OF THE PROCESS OF REPAIR AFTER RESECTION OF THE INTESTINES AND SOME OF THE COMPLICATIONS WHICH OCCUR.

A number of experiments made upon dogs were described. The operation consisted in removing a portion of the intestine and a V-shaped portion of mesentery, and then bringing the parts together. The Lembert suture was the one used. After the operation the bowel was replaced in as near its normal position as was possible. The dogs were killed at varying times after operation from three to eight days. In these cases the intestines were found matted together around the seat of operation, but a current of water flowed freely through the gut. In one case the abdomen was opened a few days after operation and this matting together of the various coils of intestine found. The intestine was replaced and the wound again closed. Six months later most of the adhesions were found to have disappeared.

Dr. Charles B. Nancrede, of Philadelphia, read a paper entitled

SHOULD LAPAROTOMY BE DONE FOR PENETRATING GUNSHOT WOUNDS OF THE ABDOMEN INVOLVING THE VISCERA?

The chief object in presenting this subject to the consideration of the Association was a medico-legal one. He asked that after a consideration of the subject the Association, the highest surgical tribunal of the country, express an authoritative opinion upon this question. Reference was made to the experiments of Wegner and Grawitz, showing that the healthy peritoneum can dispose of air, serum, bile, and healthy urine. When, however, air and putrescible fluids in greater amount than could be disposed of in a short time were introduced, decomposition occurred, and septicæmia resulted. A notable exception was that living defibrinated blood never decomposed under these circumstances. This seems to prove the truth of the suggestion of the author that the presence of fibrin-ferment, and probably its absorption, is one of the dangers of peritoneal trau-

matism. The ordinary micro-organisms produce no evil effects, provided the quantity of putrescible matter does not exceed that which may be disposed of in a short time. In small quantities the pathogenic micro-organisms produce no harm. Suppurative peritonitis is produced by these micro-organisms when stagnant fluids are present, capable of nourishing the bacteria, when the surface of the peritoneum has been destroyed by caustic fluids, and when there is a wound of the peritoneum. The practical application of these experiments teaches that all blood and serum should be removed and free drainage provided; every wounded surface must be coaptated; if a tube is used, the opening must be carefully guarded; the depression of the circulation present during shock must be removed; and the vascularity of the peritoneum must be kept as near the normal as possible.

When visceral wounds do undoubtedly exist, the tendency of these cases is invariably towards death. Hæmorrhage, in itself, is rarely fatal, but a very small collection of blood may be followed by fatal consequences, either through the induction of sapræmia or by furnishing pabulum for the development of organisms productive of suppurative peritonitis. In nearly every case, death is due to septic peritonitis caused by extravasated matters. Of those attacked with septic peritonitis 90 per cent. die within twenty-four hours. When recovery ensues, the effused matter is absorbed and a limited adhesive peritonitis glues the injured organ to the abdominal walls or to a neighboring viscus. This process is successful in about 8 per cent. of the cases. Shock, and the risk of rendering a peritonitis septic and diffused, which might have remained local and simple, are the dangers of the operation; but as we have the power of rendering the inflammation resulting from the manipulations innocuous, shock is practically the only result to be dreaded. If these facts and the deductions from them be true, all ball wounds of the abdomen involving the stomach, intestines, bile, or urinary bladder should be treated by suture, or by resection and suture. Injured omentum should always be excised and the serous surfaces carefully sutured. Wounds of the liver and pancreas are to be treated in the manner to be described. A wounded spleen or kidney is to be removed, provided certain contra-indications do not exist. Even penetrating wounds of the abdomen without involvement of the viscera are better treated by exploratory section than by the expectant method. In many instances, unsuspected injuries of the blood-vessels and viscera will be found and appropriately treated. The speaker laid but little stress upon most of the symptoms said to be diagnostic of wounds of the viscera, and held that the diagnosis should be made by the eye alone. The track of the ball should be enlarged, under aseptic precautions, until it has been determined whether or not the peritoneum has been opened. Then median section should be performed to ascertain the existence of and repair any damage that may have been done. The above remarks can only apply to wounds of the anterior and lateral walls of the abdomen. When the posterior wall is involved, it is unadvisable to ascertain the fact of peritoneal penetration by direct exploration. In these cases, a correct opinion is almost always difficult, and often impossible, without laparotomy.

The rational signs of peritoneal or visceral lesion were briefly mentioned. The escape of bile, fæces, or the contents of the stomach, at once determines the question of visceral penetration. These signs, however, are rare, even when visceral lesion is present. Repeated vomiting of considerable quantities of blood almost certainly points to peritoneal or vssceral penetration. This symptom is unlikely to be present, even when there are numerous wounds, unless one involves the stomach or upper portion of the small intestine. The passage of blood in quantity by the bowel is strong presumptive evidence, but it rarely occurs early enough to be of practical diagnostic value for operative purposes. The presence of fluid within the abdomen within an hour or two after the injury is a positive indication of peritoneal penetration and probable visceral injury, for only intra-peritoneal hæmorrhage could produce such rapid accumulation of fluid. The rapid accumulation of intestinal gas in the general peritoneal cavity is a sure sign of wound of the peritoneum and of the gut. To be of much value it must appear within a short time after the injury. Finally, an amount of hæmorrhage which cannot be accounted for after a careful examination of the parietal wounds, indicates penetration and vascular or visceral lesion.

Profound shock, if not due to hæmorrhage, is a contra-indication to operation. The surroundings should not contra-indicate operation in a proper case, provided the operator is an expert in abdominal surgery. Most cases will do better if left to nature than they will if operated on by a bungling surgeon. If well advanced peritonitis exists, laparotomy is contra-indicated. Where there is no visceral complication, operation under these circumstances may sometimes be justifiable. Laparotomy, if done at all, should be done at the earliest possible moment that the condition will admit of it. Shock is the only thing that should delay the operation, and this should not do so if the condition is produced by hæmorrhage. In operating, strict antiseptic precautions should be carried out. The incision should always be median, extending from a short distance above the umbilicus to two inches above the pubes. Unless there be free hæmorrhage, the small intestines should be carefully gone over, keeping them constantly enveloped in towels wrung out of hot water. Afterwards the stomach, spleen, kidneys, bladder, etc., must be carefully examined. The sources of a severe hæmorrhage must at once be sought for. Wounds of the bowel should be secured with the Lembert suture and dusted with a little iodoform. Wounds of the liver, if occupying its free border, should be coaptated, if possible, with dry antiseptic catgut, which will soon swell and fill the track made by the needle. If this cannot be done, the hæmorrhage may possibly be arrested by the thermo-cautery; or if the bleeding is free, the wound should be plugged with an iodoform gauze tampon. If, at the close of the operation, the bleeding is almost completely checked, the

cautery may be used as a further protection and the tampon removed. If, however, the bleeding is still free, the tampon should be replaced and allowed to remain permanently. Wounds of the pancreas, spleen, and kidneys are to be treated in a similar manner. If these measures fail, the spleen or kidney is to be removed. Wounds of the bladder had best be united with dry catgut. Contused portions of the bowel should be excised. Wounded or contused omentum or mesentery should also be removed. In removing a portion of the bowel, the cuts should correspond to the distribution of a large mesenteric branch. Should the pulse fall during the operation, flushing the abdominal cavity with hot water is often of service. The peritoneal toilet is most quickly and effectively made by irrigation with warm sterilized water and subsequent removal with sponges. Wounds of the peritoneum should be united. In closing the abdominal cavity, the peritoneum should be sutured with fine silk or catgut. The muscular, aponeurotic, and cutaneous structures should then be united with strong silk. The wound should be dusted with iodoform, and the dressing completed by the application of a pad of absorbent cotton and a flannel bandage.

Alimentation should be carried on by the rectum for forty-eight hours, when possible. Where peritonitis comes on after the operation, the treatment will depend upon whether it has developed rapidly or gradually. In the former case there is often evidence of shock from vaso-motor paresis; and in these cases small doses of morphia with atropia will be of service, while large doses of opium may prove fatal. This should be continued until pain is relieved and the patient falls into a quiet sleep, from which he is readily aroused. In the latter stages of peritonitis, one or more hypodermics of atropia will at times save otherwise hopeless cases. For the control of the vascular processes involved in peritonitis we have two powerful measures in the ice coil to the abdomen and in the use of leeches, if applied early and the patient has not lost much blood. If the temperature continues to rise despite treatment, it is probable that ptomaines are being absorbed, producing sapræmia. In such cases, irrigation with safe antiseptic fluids is indicated.

In concluding, the speaker stated that everything advanced was to be viewed as more or less provisional, since sufficient experience in the operative treatment of these cases has not been accumulated to warrant positive statements.

(*To be concluded.*)

CHICAGO SOCIETY OF OPHTHALMOLOGY AND OTOLOGY.

Stated Meeting, February 8, 1887.

THE PRESIDENT, E. L. HOLMES, M.D., IN THE CHAIR.

BOERNE BETTMAN, M.D., SECRETARY.

DR. W. FRANKLIN COLEMAN read a paper on

THE USE OF A PLUS CYLINDER IN SIMPLE MYOPIC ASTIGMATISM OF LOW DEGREE.

(See p. 592.)

DR. GARDINER said he preferred to give the same minus cylinder glass for reading as for distance. He wished to have the eye use the normal amount of accommodation, and does not care to give two pairs of glasses; one for distance (the minus cylinder) and one for reading (the plus cylinder).

DR. BETTMAN had always prescribed the minus cylinder for reading. Since Dr. Coleman had mentioned the substituting a plus cylinder for a minus he had tried it in four cases, and in two of them without a good result.

DR. HOLMES had tried the plus cylinder as above described, and found the minus cylinder more satisfactory.

DR. GRADLE has always found the minus glass more satisfactory than the plus. He has frequently noticed that the axis of the minus cylinder determined with homatropine differs from that determined when the accommodation recovered, but the patient always accepted the former in reading.

DR. GARDINER said he had frequently noticed the patient in reading change the axis of the distance cylinder.

DR. COLEMAN, in reply, said that in his experience, patients with low degrees of myopic astigmatism did not care to wear glasses for distance. He was pleased to hear the experience of these members, though it differed from his own.[1]

DR. J. ELLIOTT COLBURN read a paper on

GALVANIC CURRENT IN THE TREATMENT OF CERTAIN FORMS OF CATARACT.

(which will appear in an early issue.)

Stated Meeting, February 12, 1887.

THE PRESIDENT IN THE CHAIR.

DR. F. C. HOTZ reported a case of

PARTIAL TRICHIASIS RELIEVED BY STELLWAG'S METHOD OF REVERSING AND TRANSPLANTING THE CILIARY BORDER.

(which will appear in an early issue.)

THE PRESIDENT presented a

CATARACT GLASS, DOUBLE CONVEX CYLINDRICAL,

axes at right angle and equivalent to + 12, D. spherical, ground by Meyrowitz Brothers, New York. He stated that such lenses had been long in use by watchmakers and in the construction of certain optical instruments. His attention was called to the subject more than a year ago by a friend, a distinguished surgeon of New York, upon whom had been performed a successful cataract operation. The usual glasses, if he remembered correctly, gave perfect satisfaction. After a secondary operation for capsular remains, the patient found difficulty in adjusting spherical glasses. He then experimented with cylindrical lenses with great satisfaction. There is reason to believe that this patient is one of the first who ever wore such a combination as being superior to spherical lenses. The patient, after visiting some of

[1] Since the above was written Drs. Noyes and Roosa (New York) express an experience similar to Dr. Coleman's in the substituting of a plus cylinder glass in simple slight myopic astigmatism.

the European clinics, was led to believe that few, if any, of the teachers knew, by practical experience, that such cataract glasses were advantageous to some patients. Experience must determine whether the slightly less spherical and chromatic aberration and the somewhat enlarged field of the cylindrical lens, such as was here presented, can be of special benefit to cataract patients, and those requiring strong positive lenses.

The President also presented a small

INSTRUMENT FOR INCISING SECONDARY CAPSULAR CATARACT,

in cases in which iridectomy had been performed. The instrument is practically a very narrow Græfe's knife, bent on the flat at about half an inch from the point, making a right angle with a square shoulder. The metal portion of the handle is round and small, not unlike that of a cataract needle. The handle of the instrument, in operating, is held in position as in making the corneal incision for extraction of cataract. The point is carried through the periphery of the cornea into the anterior chamber, the plane of the knife being in the plane of the perpendicular meridian of the globe. A slight rotation of the handle carries the cutting edge of the instrument through the opaque capsule. Dr. Holmes had used this instrument in three cases with great success. In the fourth case, the very tough membrane was simply torn from its attachments and displaced. The wound in the cornea produced by the instrument is somewhat larger than that made by a stop needle. There is less violence, however, to the tissues than in cases in which it is necessary to make extensive motions with the handle of a stop needle or of Knapp's knife needle to ensure rupture of the membranes. An instrument right or left is required for each eye.

FOREIGN CORRESPONDENCE

LETTER FROM EDINBURGH.[1]

Skene Keith—Ovariotomy—Tapping Cysts of the Broad Ligament—Myo-fibroma of the Uterus—Professor Chiene—Resection of Knee and Ankle—Amputation of Thigh—Resection of Hip—Professor Annandale—Resection of Knee—Tuberculosis of Knee—University of Edinburgh.

Dear Dr. Fenger:—I had the pleasure of witnessing an ovariotomy by Mr. Skene Keith, assisted by his father, Dr. Keith. Young Keith has inherited many of the good qualities of his father, and promises to become one of the most successful ovariotomists. I doubt if ever a man of his age could show such a record of cases as he has recently published, and it is only just to say that the statistics published by the Keiths can always be relied upon.

The patient was 74 years of age, and the tumor had been growing for two years and had been several times tapped. The cyst was large, and in the pelvis a number of hard nodules could be felt. The operator and assistant were in shirt sleeves and wore an apron. Ether was used as an anæsthetic. The abdominal incision was about three inches in length, and the cyst was tapped and, as its contents escaped, it was drawn forward into the wound. When nearly empty it was freely incised, the hand introduced and a number of smaller cysts crushed, which diminished the tumor sufficiently in size so that it could be brought out of the wound. The pedicle was treated as above described, and after the removal of the clamp the compressed cauterized portion looked like a dry translucent membrane. A number of firm adhesions to the abdominal wall were carefully isolated, tied on each side and cut between the ligatures. The operation was done slowly and carefully, and afforded a good illustration of what is meant by conscientious scientific surgery. A number of convalescent patients were shown where abdominal section had been done for different indications, and all of them were doing well. An old lady 78 years of age had an ovarian tumor removed three weeks previously, and now insisted on leaving her bed, as she insisted that she felt stronger and better than before the operation. In one case the pelvic adhesions were so extensive and firm that only part of the tumor could be removed; the remainder was fixed in the wound and drained, and the patient was doing well and the tumor becoming smaller in size. Dr. Keith has observed numerous permanent cures after simple tapping of cysts of the broad ligament, and is in favor of resorting to this simple procedure in all such cases as a preliminary or tentative measure before exposing the patients to the increased risks of an abdominal section. In spite of his unparalleled results in the operative treatment of myo-fibroma of the uterus, he assured me that as his experience increased with this class of tumors the more he dreaded a radical operation. Dr. Keith is a representative conservative surgeon, but he can never be accused of possessing a "statistical conscience," as when the indications for an operation are clear to him he will never shrink from the responsibility of an operation, no matter how desperate the case may be, for the sake of improving his statistics. His fame is established, his record is made, and whatever his statistics in the future may be, the scientific world can rest assured that it is the result of honest, conscientious work. The second evening in Edinburgh I spent in the family of Dr. Keith, as I had been invited to dinner. I felt that I was surrounded by the blessings of a truly Christian home, and the evening was spent in discussing abdominal surgery. Although the weather was cold and a drizzling rain rendered out-door exceedingly unpleasant, the doctor insisted on accompanying me to the hotel, where he bade me an affectionate farewell, and I retired with pleasant thoughts of the many profitable hours spent in his genial presence.

While in Edinburgh I attended a lecture by Professor John Chiene, on Resection of Knee and Ankle-joint, and Amputations of Thigh. After resection of knee-joint he does not resort to any immediate measures to secure coaptation and immobilization, but relies on extension by means of weights and pulley,

[1] By permission of Drs. Fenger and Senn.

to prevent posterior displacement of tibia. Only a moderate degree of extension must be applied, so as to overcome the contraction of the hamstring muscles without effecting diastasis of fragments, which might lead to pseudo-arthrosis. Carden's transcondyloid amputation was clearly described, and a comparison drawn between it and Syme's amputation through the ankle-joint. In Gritti's amputation the bone is divided higher up, so as to make room for the patella, and this operation resembles Pirogoff's amputation through the ankle-joint. In this operation the great difficulty that presents itself is the tilting of the patella, which, when it takes place, interferes in obtaining a satisfactory result. The patella must hang loosely over the sawn surface of the femur, and when this is not the case it will become necessary to divide the insertion of the quadriceps femoris from within with a tenotomy knife. In amputations at the hip-joint in children, and in adults who have become greatly emaciated, he prevents hæmorrhage by circular elastic constriction applied at a point corresponding to the perineum and above the tip of the trochanter major. After making the flaps and ligating all visible vessels, the constriction is removed and the upper portion of the femur laid bare by a longitudinal incision and disarticulated. In fleshy people he recommends the use of Spence's skewer, which is passed through the hip joint in the same manner as the amputating knife in the old operation, and after transfixion the tissues anteriorly and posteriorly are constricted separately by winding over the ends of the skewers a rubber cord in a figure of 8. The anterior flap is made first and the large vessels are tied; after disarticulation the posterior flap is carefully examined and all visible points tied, when the constrictors are removed separately and additional bleeding points secured. By resorting to this simple procedure the lecturer claimed that hæmorrhage could be reduced to a minimum.

In excision of the hip-joint he has tried the more conservative method of removing only the head of the femur, but experience has taught him that this method of operation does not afford adequate drainage, and he has been obliged to come back to complete excision, so that at present he always removes the trochanter major. To prevent muscular contraction after amputation of the thigh he resorts to a novel device. Sheet lead is moulded to the shape of the stump and applied over the dressings; the weight of this splint, it was claimed, would suffice in preventing undue muscular contractions. Professor Chiene is a fluent speaker and most excellent teacher. Almost every member of the large class listened with undivided attention and took full notes of the lecture. In a small but well supplied laboratory Prof. Chiene, with the help of his assistant, Dr. Edington, important and valuable work is done in bacteriology. Here specimens are examined and diagnoses are made, and all known germs are cultivated, and a considerable enthusiasm prevails for the detection of new microbes. It seems to me that every teacher of surgery should imitate the example of the Glasgow professor of surgery in making observations and researches independently of the teacher of general pathology, as in doing so the student's attention is constantly called to the importance of surgical pathology.

I had the pleasure of accompanying Professor Annandale through his wards, and of witnessing several important operations. Prof. Annandale is a perfect type of a Scotch or English surgeon, a good anatomist, skilful with the knife, a dexterous but careful operator. An immense clinical experience enables him to diagnosticate surgical lesions and injuries almost on sight, and with remarkable accuracy. He has abandoned typical resections of the knee-joint in children in favor of arthrectomy and atypical or partial excisions. The details of antiseptic wound treatment he considers superfluous, and relies mostly on dry dressings, as sublimated cotton. After excision of the knee-joint, he applies a hollow posterior wire splint, with an opening for the heel. This splint is well padded and covered with Mackintosh cloth, so as to render it impermeable to fluids. It is applied immediately after the operation and fixed to limb with a plaster of Paris circular splint extending from toes to near the perineum, with an open space for the knee. This dressing completely fixes the limb, and at the same time permits changes of wound dressing without removing the splint.

His method of treatment of affections of the knee-joint which call for operative measures, was illustrated on a boy about 18 years of age, suffering from tubercular disease in its earlier stage. The joint was only moderately swollen and the operation could certainly be designated an early one. Volkmann's incision was made and the patella divided transversely with a saw. The synovial membrane was dissected away with the knife and the articular cartilage was partially removed in slices with the same instrument. A fungous osteitic depot was found in the internal condyle of the femur, and was gouged out, as well as a similar but smaller focus in the head of the tibia near the articular cartilage. After irrigating the wound with a weak solution of sublimate and arresting hæmorrhage, the patella was united with one silver wire suture, the ends of which were cut short and hammered down upon the bone. A small drain was introduced at the most dependent point on each side as far as the bone. Protective silk and sublimated cotton constituted the dressing. The limb was immobilized in the manner described above. The next case was a resection of the wrist for a suppurating tubercular lesion of the joint, in a female 35 years of age. A single long incision was made over the middle dorsal aspect of the wrist, and after opening the radia-carpal articulation the lower end of the radius was brought into the wound and the whole articular surface removed with the saw; all of the carpal bones were removed, as well as the articular surfaces of the metacarpal. The wound was repeatedly irrigated, and drainage established anteriorly by pushing a dressing forceps through the tissues, cutting the skin and widening the tract by distending the blades of the forceps a drain was introduced and the wound closed by suturing. Wound-dressing the same as in previous case. The hand and fore arm were fixed upon a pistol-shaped splint.

I visited Greenfield's laboratory, where I had an excellent opportunity to study a great variety of bacterial cultures. One of the favorite culture substances in this laboratory is bread paste. Although the microbes do not show so well upon this substance as gelatine or agar-agar, the cultivations were very large and could be readily recognized. The Medical Department of the Edinburgh University contains, as I was told, nearly 2000 students, and to judge from the crowded condition of the lecture rooms and the crowds in the halls rushing from one room to another, the estimate cannot be far from being correct. Although the system of instruction is perfect and the means for demonstrations excellent, and most of the teachers have more than a local reputation, I could not but think that the students injure their own interests by congregating in such numbers, and that it would be advantageous to them if at least half of the number would seek places of instruction where the same facilities are offered and where the teachers can devote more time to each individual student. N. SENN.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Tuberculosis of the Joints—Respiratory Therapeutics in Phthisis—Death of Dr. E. Darwin Hudson.

At the May meeting of the New York County Medical Association, Dr. Ira B. Read read a paper on *Tuberculosis of the Joints*, in which he related in detail the history of a case now under his care which he believed to be of this nature, in which, during the past five years, a number of joints have been successively attacked; the patient (at the present time 60 years of age) having, up to the beginning of this trouble, always enjoyed excellent health.

At the same meeting Dr. Lawrence J. McNamara read a paper on *Respiratory Therapeutics in the Treatment of Phthisis Pulmonalis.* About four years ago Dr. McNamara's attention was attracted to an inhalation apparatus consisting of a funnel-shaped glass globe with two openings; one for the attachment of the metallic disc holding in its centre the spray tubes, and the other, immediately opposite, terminating in a long mouth-piece. The fluid to be atomized was placed in the globe, and a rubber tube used to connect the fluid with one of the spray-tips, while the other tip was connected with a cylinder of compressed air. The globe rested on a bracket capable of being raised or lowered as required. The patient, standing with head elevated, took the mouth-piece in his mouth, and inspired; allowing the expired air to escape through the nostrils.

His first impression was that this apparatus was of similar nature to many others tried before, and found wanting; but experience in its use had convinced him of its practical utility. The compressed air is made to pass through a large cylinder into a smaller one before reaching the spray-tubes, and by this means, the valves being kept partly opened, constant, steady pressure could be maintained in the smaller cylinder; with the effect of constantly producing the same character of spray.

Dr. McNamara has used this apparatus for nearly eighteen months, having begun to employ it with the idea that he could no doubt relieve many of the distressing symptoms in a considerable proportion of his phthisical patients; but, noticing the marked amelioration of the condition in the majority of instances, he determined some months ago to keep more exact records of temperature, pulse, respiration and expectorating, noting especially the presence or absence of bacilli, and the effect of the treatment upon them. All the cases were in private practice, and the whole number treated was between fifty and sixty; but, as nearly one-half had the treatment but a few times and at irregular intervals, they are excluded from the account. The cases considered embraced almost all the forms of phthisis except the disease in the stage of excavation, and the patients remained under treatment from one week to nearly eight. Under this method of treatment the cough and expectoration diminished, and in those treated the longest the cough quite disappeared. The bacillus was found in every one of these cases, and was always present, even to the termination, with the exception of one instance; although the number of bacilli was visibly diminished. When the treatment was discontinued, however, the symptoms had in most cases disappeared. One illustration can be described in detail; that of a young married woman 23 years of age. He placed her on iron, quinia and strychnia, and gave her daily inhalations of the following solution:

℞. Sodii bicarb. .....
Sodii biborat. ..... āā ℥i.
Acid carbolic. ..... gtt. xx.
Glycerinæ. ..... f℥j.
Listerine ..... f℥ij.
Aq. destillat. ..... f℥xvj.
M.

When this treatment had been continued for nearly two weeks the expectoration was found to have increased, but its purulent character had changed to one more mucoid. The severity of the cough was lessened, and the general health had begun to improve. She was then placed on an inhalation of the dark extract of pinus Canadensis, with Lugol's solution (1 to 5 drops to the drachm), carbolic acid and distilled water. She remained under treatment regularly for about three weeks longer, and then refused to continue the daily inhalations, although consenting to come to the office two or three times a week. At the time the daily treatment was discontinued repeated examinations, made with the greatest care, failed to discover any evidence whatever of the presence of the tubercle bacillus. Three months afterward, also, the same rigid search for bacilli gave a negative result.

The sudden and untimely death of Dr. E. Darwin Hudson, the popular professor of medicine at the New York Polyclinic, at the age of 43 and in the midst of his active labors, is severely felt by the profession here. He was held in the highest esteem by

all, and no man of his years had achieved greater success as a consultant and clinical teacher; his position as physician to Bellevue and St. Elizabeth's Hospitals affording him special opportunities for study and instruction, of which he availed himself to the fullest extent. P. B. P.

GALVANIC MEASUREMENT.

Dear Sir:—I have before me copies of THE JOURNAL of April 23 and May 7. The former opens with "Treatment of Fibroid Tumors of the Uterus by Electrolysis, with a Description of Apostoli's Method," by Franklin H. Martin, M.D. Both numbers contain articles under *Domestic Correspondence* entitled "*Galvanic Measurement.*" That of the former being also by Dr. Martin, and of the latter by Dr. Engelmann, of St. Louis, Mo. I have also carefully read a paper by Apostoli, describing his method of treating uterine fibroids by powerful electrolysis, and a subsequent paper by the same author "On a New Method of Treatment of Chronic Metritis, and especially Endo-metritis, by the Intra-Uterine Chemical Galvano-Caustic." This is a translation as it appeared in the *Boston Medical and Surgical Journal* of April 21, in which currents as high as 200 milliampères are mentioned.

A careful consideration of some of the statements which are to be found in the above-mentioned papers, I believe to be of the greatest importance to physicians in general, especially to those who employ the galvanic current in their treatment of certain cases. Ohm's Law, which is as well established as the multiplication table, and which enables us to locate exactly a fault in an ocean cable, expresses the following fact: Electro-motive force divided by resistance equals current—Electro-motive force in volts, resistance in ohms, and current in ampères; these being the electrical units, the formula being $\frac{E}{R} = C$, and by deduction $E = C \times R$ and $R = \frac{E}{C}$. Thus, knowing any two of these factors, the third is easily obtained.

Electro-motive forces of batteries vary with the materials employed, and not with the quantity of material; for example, E. M. F. of the Law cell is 1.4 volts, of Leclanche 1.5 volts, of chloride of silver cell 1.06 volts, of gravity 1.079 volts; whether the cells be an inch high or a mile high. E. M. F., however, increases directly as the number of cells connected up, in series. Resistance includes internal resistance of the battery, the resistance of connecting wires, milliampèremeter, tissues, etc.; in fact, whatever is in the electrical circuit. Current is equal at all parts of the circuit.

Dr. Martin's article says: "The current of electricity used in electrolytic therapeutics should be one of moderate quantity compared to the intensity." He is here making use of obsolete terms to express the idea of currents derived from sources of high or low electromotive force. The facts are these: The effects of equal currents are equal. To obtain the same current through double the resistance, double the E. M. F. is necessary.

Again he says: "The maximum current that can be safely passed through the body, consistent with our present experience and knowledge, is about 1,000 milliampères. To get this power I use a battery composed of 115 gravity cells" In another place he says: "The results of my experiments have led me to adopt for office purposes the ordinary crowfoot gravity cells." In a note to the "1,000 milliampère" paragraph he states: "Since writing the above I have been able to use still higher currents in special cases;" and also states that "These cells are coupled in tandem," by which I judge that he means connected in series. I am afraid he has been deceived by the indications of his absolute milliampèremeter; for if his patient was constituted of pure copper in abdominal section, and in possession of a uterus of the same material, the impossibility would still remain of passing a current of 1,000 milliampères, even with a thousand cells of ordinary crowfoot battery gravity, connected in series.

But when, in the article on "Galvanic Measurement," page 472, Dr. Martin states that he had used on one tumor with very great depth of uterus, a current of 10 ampères, I can only say, "The cake is his'n, because he took it." It seems to me like a bad case of extra-uterine astigmatism!

In the article on "Galvanic Measure," by Dr. Geo. J. Engelmann, in THE JOURNAL of May 7, I notice the following: "Granting a deep uterus and thin abdominal walls, the tissues intervening between the electrodes offer a resistance of about 60 ohms." Also in the article in the *Boston Medical and Surgical Journal*, translated from Dr. Apostoli, where 200 milliampères are said to be obtained by employing 30 Leclanche elements, which would indicate a resistance between electrodes of about 200 ohms, and this without counting resistance of milliampèremeter. To the writer these resistances seem too small, though his opportunities for making these measurements have been very limited. A contact resistance alone of a flat platinum uterine probe properly inserted amounted to over 600 ohms. Undoubtedly a great variation in resistance will be observed with different subjects, as well as character of both electrodes.

Very truly yours,

H. L. BAILEY, *Electrician.*

112 Liberty Street, New York, May 10, 1887.

BRANCHES OF THE AMERICAN MEDICAL ASSOCIATION.

Dear Sir:—In view of the fact that at the coming meeting of the Association, a special Committee on the "Branch question" will submit its report, it seems strange that members who may not be present should refrain from expressing their opinions beforehand. The question is open for discussion, yet, from the silence in your columns, it would appear that the last words on this subject had been written. Your correspondents last year were more engaged in devising the means by which a change could be made than in demonstrating its fitness or advisability. This is the least advantageous method of bringing the question to an issue; the first point should be the establish-

ment of a case. Those who advocate the change do so in the expectation of extending the power and influence of the Association; of rendering possible a thorough and practical organization; and of affording a means through which an expression of opinion, or a policy, could first be shaped within the body, and then authoritatively projected beyond. The question at the bottom of this matter is medico-political rather than scientific, and the end to give the profession status as a vital factor in political life. There is no country where organization is more respected or has greater practical influence than in the United States, and when a plan can be devised which is in harmony with existing institutions and the system of representative government, its adoption will hardly fail to be advantageous. Instances have been cited in which the influence of the Association has been successfully employed in the past to great professional advantage; yet we are forced to believe that these successes were due more to the personality of the advocates than to the weight of a resolution or series of resolutions passed at the annual meetings of a scientific body. Cannot these achievements be taken as an earnest of what may be done when the means are provided? The Association now possesses within itself the elements necessary for a progression which would be unequalled in professional annals. With the assistance of The Journal it has already demonstrated a renewed vitality; and it only requires a system of organization to make it what it might be, the most powerful medical association in existence.

It is a mere matter of theory that affiliated local and State societies contribute more than moral strength or support. Their members are not members of the Association in fact, nor is the treasury enriched by a single direct contribution. If the financial aspect of this question of reorganization could be placed upon a sound and equitable basis, most of the fancied objections to real progress would be removed.

It has been claimed that the present system of representation by delegates who *alone* have the power to vote, accomplishes all that is sought from representatives duly elected by Branches; yet it appears that practically the suffrage is not so limited. A letter from an "Old Member" of the Association which appeared in *The Sacramento Medical Times*, of May, 1887, gives evidence of a different character. The writer says: "Where the necessity arises for legislative action, both registered and unregistered delegates, as well as Permanent Members who have no right to vote, indiscriminately exercise it, thoughtlessly or indifferently." Presuming that the writer knows whereof he speaks, it would seem that the delegate representation system is not by any means the safeguard that it purports to be. Admitting, however, that this is a rare occurrence, a grave and inseparable disadvantage still remains—and one which has been keenly felt by the Association very recently. The writer adds: "Moreover, with a system where a numerical attendance dependent upon locality has legislative power, there can be no fixed policy, as the conclusions of one year may be contrary to those of preceding years, or may be overruled at some subsequent place of meeting." I trust that, during the interval which still remains, those who believe in the innovation will place their side of the question before your readers. The age is one of progression, and this occasion demands that steps should be taken to furnish means of attainment commensurate with the broad prospects of the American Medical Association.

Westward Ho.

INTERNATIONAL CONGRESS.

NINTH INTERNATIONAL MEDICAL CONGRESS.

Section 9, of Pathology, Microscopical and Pathological Exhibit.

In connection with the Section of Pathology at the approaching meeting of the International Medical Congress to be held in Washington, D. C. (U.S.), commencing on September 5, 1887, there will be an exhibit of objects relating to Microscopical Anatomy and Pathology, including Bacteriology, and illustrations of Ptomaines and Leucomaines, and whatever else may throw light upon intimate Pathological processes.

In order to make the exhibit as complete as possible, the loan of Microscopical preparations, the instruments and agents for preparing them, and the apparatus for Bacteria Culture are solicited.

The means illustrative of the following subjects are desired:

a. Human and Comparative Histology, morbid and healthy, as illustrating Pathology.

b. Morbid Growths, benign and malignant.

c. Embryology, human and comparative.

d. The development and Pathology of Nervous Matter, of Brain, Spinal Cord, and Peripheral Nerves.

e. Epizoa and Entozoa.

f. Pathogenic Microbes, both discovered specimens and culture preparations.

g. Impurities in water liable to be used for drinking.

h. Miscellaneous objects of interest to the Pathologist and Microscopist—such as test objects to illustrate the working powers of particular lenses, Microscopical appliances, Bacteriological apparatus, etc.

i. Pathological specimens of moderate size to be examined without the microscope, are desired.

Competent persons will be secured to assist in the proper exhibition of objects. Those who forward objects for exhibition and intend to be present at the Congress, are requested to take charge of their own specimens during the hours of exhibition. Others, who are willing to take charge in the same manner of such specimens as the Committee in charge of the exhibit may assign them, are requested to notify the Chairman as early as possible.

All preparations and apparatus will be regarded as loans, and care will be taken to secure their proper preservation and safe return.

All persons willing to contribute to the exhibit are requested to forward a list of the objects, they propose to display, at as early a date as possible, to the address of Edward M. Schaeffer, M.D., Washing-

ton, D. C. (U. S. A.), Chairman of the Committee in charge of the exhibit.

All preparations may be sent to the same address, and on receipt will be at once acknowledged by the Committee, and those selected for exhibition will be included in the catalogue of the exhibit. The Committee can only be responsible for exercising proper care of articles received.

The President and other officers of the Section of Pathology request further contributions to the Section on any pathological subjects, but are particularly desirous of articles on the Pathological Relations of Ptomaines and Leucomaines, the Morbid Anatomy and Pathology of Alcoholism, the Etiology and Pathology of Cholera and Yellow Fever, the Pathology of Tubercle and Tuberculosis, the Influence of Inhibition in Inducing and Modifying Pathological processes; and, in connection with the exhibits, descriptions and essays which may go into the records of the Section.

A. B. Palmer, M.D., L.L.D.,
President of the Section of Pathology.
E. M. Schaeffer, M.D.,
Chairman of the Committee on the Exhibit.

Transatlantic Rates.—In the *Revue Générale de Clinique et de Thérapeutique*, we notice the following in regard to special rates for physicians coming from France to the International Congress: "In a letter addressed to various journals, M. Dujardin-Beaumetz announces that the Compagnie Transatlantique will carry French physicians to the International Medical Congress in America at a reduction of 30 per cent., making the fare 700 francs ($140) over and return, first class.

ASSOCIATION ITEMS.

AMERICAN MEDICAL ASSOCIATION.

The Thirty-eighth Annual Session will be held in Chicago, Ill., commencing on Tuesday, June 7, at 11 A.M., in Central Music Hall, corner of State and Randolph streets, and will continue four days. Good rooms for the several Sections will be provided as near the hall for general meetings as possible. Registration books will be open in Central Music Hall on Monday, the day preceding the meeting, for those who wish to register early.

In addition to the list of papers already published, the following are promised:

Section on Practice of Medicine, Materia Medica and Physiology.

R. W. Seay, Pilcher's Point, La., on "Aids in the Prevention of Fevers;" Wm. B. Fletcher, Indianapolis, Ind., "Diseases of the Dura Mater Producing Motor Paralysis, Facial Spasm, and Neuralgias, etc."

Henry J. Reynolds, of Chicago, "A New Method of Producing Local Anæsthesia of the Skin."

John V. Shoemaker, of Philadelphia, "Geranium Maculatum."

E. C. Spitzka, of New York City, "Acute Fatal Delirium; Its Differential Relations."

Section on Obstetrics and Diseases of Women.

A. McLaren, St. Paul, Minn., "The Relationship between Puerperal Fever and Erysipelas in Both its Acute and Dormant Forms."

L. Ch. Boislinière, St. Louis, Mo., "The Management of Occipito-Posterior Positions."

E. W. Cushing, Boston, Mass., "The Use of the Buried Continuous Animal Suture in Laparotomy and in Perineorrhaphy."

Fayette Dunlap, Danville, Ky., "Sudden Death in Labor and Childbed."

Section on Surgery and Anatomy.

Henry C. Bœnning, Philadelphia, Pa., "On Some Points in Human Anatomy."

Section on Ophthalmology, Otology and Laryngology.

J. E. Harper, Chicago, Ill., "The Causative Relation of Ametropia to Ocular Disease;" E. Fletcher Ingals, Chicago, Ill., "On Suppurative Inflammation of the Antrum of Highmore."

Railway Rates.—Arrangements have been made by which delegates living on trunk lines may apply for blank certificates to Dr. Liston H. Montgomery, of Chicago, Chairman of Committee on Transportation. Delegates should name the line of railway over which they will travel when making the request. Dr. Montgomery will sign all return certificates, and no deviation in this matter can be permitted. Some member of the Transportation Committee will be always present at the meeting to give information.

Liston H. Montgomery,
Chairman Com. on Transportation.

RAILROAD RATES.

Dr. Liston H. Montgomery, Chairman of the Transportation Committee, has received the following communication from the General Passenger and Ticket Agent of the Northern Pacific R. R.:

I have received your favor of the 17th, and in reply beg to say, that to members of the American Medical Association in attendance at the convention in Chicago from June 7 to 10, we will issue *Return Tickets* from St. Paul or Minneapolis to points on our line *in Dakota only*, at *One-Fifth Fare* for the return trip. These delegates, in going to Chicago, must be instructed to purchase of Northern Pacific agents first-class tickets from *starting-point to St. Paul*, and take receipt therefor of our agents. Attached to this receipt is a certificate which certifies to their attendance at the convention. These you must fill up, and attach your signature thereto.

On presentation of such receipt and certificate to our agents at St. Paul and Minneapolis Union Depots, or to B. N. Austin, No. 19 Nicollet House Block, Minneapolis, or C. E. Stone, 169 East Third St., St. Paul, return tickets at one fifth fare will be issued as above.

We cannot make delegate excursion rates returning from St. Paul to points in Minnesota under the Minnesota State law.

Please advise me if fully understood, and if you will see that delegates to the convention from points on our line are fully instructed as to the method of procedure. Yours truly,

Charles S. Fee,
Gen. Passenger and Ticket Agent.

The St. Paul, Minneapolis & Manitoba R. R. has agreed practically to the same concession as its competitor, the Northern Pacific, viz.: that of one-fifth fare to return; but it is believed, in this instance, to apply to Minnesota delegates as well.

N. B. In any case, however, delegates must take receipt of agent of whom going ticket is purchased. Ticket agents along this line will be supplied with a combined certificate and receipt,

to be issued upon application of the passenger purchasing one-way unlimited ticket.

Only those in *actual attendance* at the meeting of the American Medical Association will be given certificates to return, the aggregate of which must at least be twenty persons who pay full fare "going," along this line.

The Committee on Transportation appreciate the above courtesies, and trust our Minnesota and Dakota friends will find it convenient to avail themselves of same.

Liston H. Montgomery,
Chairman Com. on Transportation.

MISCELLANEOUS.

The St. Charles Co. (Mo.) Medical Society was organized at Wentzville, Mo., on May 17. The following were chosen officers for the ensuing year:

President—J. A. Talley, Wentzville, Mo.

Vice-President—J. C. Edwards, Cottleville, Mo.

Secretary—H. H. Vinke, St. Charles, Mo.

Treasurer—M. D. Carter, New Melle.

The most interesting part of the proceedings was a report by Dr. Edward Talley, of Wentzville, on "The Treatment of Tuberculosis by Bergeon's Method." Dr. Talley is unfortunately suffering from phthisis himself, but stated that since the employment of Bergeon's treatment cough, expectoration, night sweats and other distressing symptoms have been materially improved, and that he is in hopes of being perfectly cured.

State Medical Society of Arkansas, will hold its next annual session at Little Rock, June 1, 2 and 3, 1887. President, James A. Dibrell, Sr., M.D.; L. P. Gibson, M.D., Secretary.

Ohio State Medical Society, will hold its next annual meeting at Toledo, June 15, 16 and 17, 1887. Thos. McEbright, M.D., President; G. A. Collamore, M.D., Toledo, Secretary.

Yellow Fever in Florida.—A dispatch from Key West, of May 23, says: Mr. Baker, who was declared Saturday to be suffering from yellow fever, died this morning. His wife, who contracted the disease a few days later, also died to-day and was buried a few hours after her husband. Both developed the most malignant symptoms. A sister of Mrs. Baker, who lived in the same house, which is in the principal street in the heart of the city, is also down with fever, but her case is not hopeless. The disease is undoubtedly traced to some bedding recently brought from Havana. Several other suspicious cases are said to exist.

Health in Michigan.—For the Month of April, 1887, compared with the preceding month, the reports indicate that tonsilitis, erysipelas, measles, diphtheria, and influenza decreased in prevalence. Compared with the preceding month the temperature in the month of April, 1887, was much higher, the absolute humidity was much more, the relative humidity was much less, and the day and the night ozone were slightly less. Compared with the average for the month of April in the nine years, 1879–1887, intermittent fever, diphtheria, remittent fever, scarlet fever, pneumonia, consumption of lungs, influenza and bronchitis were less prevalent in April, 1887.

For the month of April, 1887, compared with the average of corresponding months for the nine years, 1879–1887, the temperature was slightly lower, the absolute and the relative humidity were slightly more, the day ozone was about the same, the night ozone was considerably less. Including reports by regular observers and others diphtheria was reported present in Michigan, in the month of April, 1887, at twenty-five places, scarlet fever at thirty-nine places, typhoid fever at eight places, and measles at thirty-six places. Reports from all sources show diphtheria reported at twenty-one places less, scarlet fever at thirteen places less, typhoid fever at five places less, and measles at one place more in the month of April, 1887, than in the preceding month.

The Practice of Medicine by Apothecaries in Pennsylvania.—At a meeting of the Philadelphia County Medical Society, held February 23, 1887, it was resolved to address to the Senators and Representatives from Philadelphia County, and to the Governor of the Commonwealth, a communication signed by the President and Recording Secretary of the Society, requesting them to oppose and to disapprove of the passage of Section 10 of the proposed Pharmacy Law now pending before the Legislature of Pennsylvania. This section so far repeals the Registration Act as to permit druggists to engage in the practice of medicine, provided that they conduct only an office practice.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 14, 1887, TO MAY 20, 1887.

Major Morse K. Taylor, Surgeon, retired from active service, May 14, 1887. S. O. 111, A. G. O., May 14, 1887.

White, R. H., promoted to be Surgeon with the rank of Major, to take effect from May 14, 1887.

Capt. Jno. D. Hall, Asst. Surgeon, granted leave of absence for one month, with permission to apply for one month's extension. S. O. 74, Dept. Col., May 11, 1887.

Suter, William N., appointed Asst. Surgeon, U. S. Army, with the rank of First Lieut.; to rank as such from May 16, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING MAY 21, 1887.

Curtis, L. W., P. A. Surgeon, ordered to the "Quinnebaug."

Baker, J. W., P. A. Surgeon, ordered to the hospital, Chelsea, Mass.

Price, H. F., Surgeon, ordered to Board duty, Annapolis, Md.

Gravatt, C. N., Surgeon, detachment from "Michigan," revoked.

Lumsden, G. P., P. A. Surgeon, orders to the "Michigan" revoked.

Siegfried, C. A., Surgeon, ordered to the "Quinnebaug."

Persons, R. C., Surgeon, detached from the "Saratoga."

Farwell, W. G., Surgeon, ordered to the "Saratoga."

Dixon, W. S., Surgeon, ordered to special duty, Baltimore, Md.

Rogers, B. F., Surgeon, ordered to the Marine Rendezvous, New York.

Wells, Howard, P. A. Surgeon, ordered to the "Jamestown."

Wise, J. C., Surgeon, detached from the "Jamestown."

Harvey, H. P., Surgeon, ordered to the "Iroquois."

Waggener, J. R., Surgeon, detached from the "Iroquois."

White, Stuart S., M.D., of Frederick, Md., commissioned Asst. Surgeon in the Navy, May 19.

THE

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EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

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ORIGINAL ARTICLES.

OUR POSTERITY.

The Address of the Retiring President before the Allegheny County Medical Society, April 19, 1887.

BY JOHN M. BATTEN, M.D.,

OF PITTSBURGH, PA.

The constitution of this Society makes it obligatory upon the retiring President to deliver an address on medicine or one of kindred topics. The subject of my address has been treated of before more ably than I could even hope to do; but the good results from frequent presentment of a subject will as surely follow as will the wearing of the granite stone follow the constant falling of raindrops upon it. The subject which I wish to present for your consideration to-day is

OUR POSTERITY.

The question, What shall we do to be saved? is just as pertinent a question now as it was two thousand years ago. My object principally, in this address, is to make a few remarks, briefly, bearing upon the laws of heredity, upon the great importance of proper selection, and upon a correct system of education of the people's physical, intellectual and moral powers.

It has been, I believe, truthfully asserted that in each generation, in all civilized countries, there have risen to the surface a few men who are the ideals of perfection, physically, intellectually and morally. If the ancestry of such men were traced, it would be found that they were the offspring of parents for several generations who presented just such qualities with which their descendants were endowed. Suppose A. was one of these ideal men; it is likely that his father and mother were persons above the average physical, intellectual and moral development, and that their parents were blessed with the same attributes. We have had many instances in our own country where an A. rose to a position of eminence, power and trust in which he exercised a mighty influence in church or in State, and justly so, by having inherited a good moral, intellectual, and physical development. It has also been noticed that his descendants have exercised the same influence for several generations, and then lost sight of entirely. It would seem to be adhering to the laws of heredity that like begets like, and therefore A.'s children, if he made proper selection, morally, intellectually and physically, would be on the ascending scale of development; and, other things being equal, would be stronger physically, intellectually and morally than their parents, and so on *ad infinitum*. And such would be a fact, but some of A.'s descendants make improper selection, and consequently their children fall below the plane of development of their parents; and once below this plane of development it requires many generations, even though proper selection were made, for the descendants who had thus fallen below A.'s plane of development to ascend again to that plane.

Suppose A. to have selected a wife whose plane of development, morally, intellectually and physically, was far below his own plane; it would follow that his children would be also below his plane of development, and so on indefinitely, or until A.'s posterity would become extinct, provided his descendants continued to make improper selections. Sometimes, however, a few of A.'s children, who inherit the constitutional development of the father, may possibly not descend below the father's plane of development, but his children and his grandchildren who inherit A.'s wife's inferior physical, intellectual and moral development will, according to the laws of heredity, descend below A.'s plane of development. The question might be asked: Would it be possible for any of A.'s descendants, who had thus fallen below his plane of development, to ascend again to the plane from which they had descended? I believe the answer to this question might be made truthfully in the affirmative; that is, if a wise vigilance was exercised in their selection. For example, suppose A. and B. (brothers), being both equal in moral, intellectual and physical development, should each make a selection—the former of C. and the latter of D. The plane of D.'s development is far below that of C.'s. The law of heredity would place B.'s children on a plane of development far below that of A.'s; and consequently, in order that B.'s children should rise to the plane of development of A.'s children, it would require many generations, even though wise selections were made.

An exception to the above law might be when B.'s children would inherit the constitution of the father, in which case some of B.'s posterity, through proper selection, might not be affected, but B.'s children who inherit the constitution of the mother would be the most affected, and would require the longest time, through proper selection, to ascend to the plane of development of A.'s children.

By our present custom of selection, there must

naturally be a sort of zigzag or shuttlecock scale of development—some families are on the ascending scale of development, whilst others are on the descending scale. Some of those families' descendants who are on the ascending scale may place their descendants on the descending scale by improper selection, whilst those on the descending scale may rescue a few of their descendants from such a scale of development by proper selection; but the posterity of many families who are placed thus on the descending scale of development are never rescued from such a scale of development by proper selection, but so continue along the downward scale of development till their posterity becomes extinct. So, too, occasionally along the ascending scale of development there may be found an offspring of weakly development; and, on the other hand, along the descending scale there may be found quite a perfect development physically, intellectually and morally; but on the latter scale of development there is more likely to be found a feeble body, possibly with a good development intellectually and morally.

There are many other causes besides improper selection which may place families and their descendants fon the downward scale of development, only a few ol which causes we have time at present to refer to, name y: acquired disease, our present system of education, together with the high pressure education of women. I have taken it for granted that both acquired and hereditary diseases are the prime factors in the cause of the physical, the intellectual and the moral disability of those on the descending scale of development, and such should be avoided in selection.

Our present system of education has a tendency to develop the intellect at the expense of dwarfing the development of the body. We should have such a system of education as would develop simultaneously the physical, the intellectual and the moral powers of the child. Dr. Charles K. Mills says: "Education should be so arranged as to develop the brain by a natural process—not from within outward; not from the centre to the periphery; not from above downward—but as the nervous system itself develops in its evolution from a lower to a higher order of animals, from the simple to the more complex and more elaborate. Any system of education is wrong, and is calculated to weaken and worry an impressionable nervous system, which attempts to overturn or change this order of the progress of a true development of the brain. To develop the nervous system as it should be developed—slowly, naturally and ev enly—it must also be fed, rested and properly exercised." It might be added that the same scrupulous care as recommended by Dr. Mills in the development of the brain ought also to be exercised, at the same time and in the right direction, in the development of the moral and physical powers.

HIGH-PRESSURE EDUCATION OF WOMEN.

To be convinced of the fact that this high-pressure education of women will be conducive to weaken them as a class physically, and prevent them from being healthy mothers, and finally affect the health of their offspring, one need only open the door of any institution of high-pressure education of women, and there observe, too frequently, the pale faces, the sunken cheeks, the flat breasts, the wasp waists, and the stooped forms among many of its inmates. Even Napoleon, with his keen perceptive mind, nearly a century ago observed the evil tendency of high-pressure education of women; when he was asked the question, by a high-pressure educated French lady: who was the greatest woman then living? although the latter expected a different reply, Napoleon curtly answered: "The mother of the greatest number of children." A better reply would have been: the mother of the greatest number of healthy children. The first requisite to success in life, says Mr. Herbert Spencer, is to be a good animal, and to be a nation of good animals is the first condition to national prosperity. In order that children be good animals it is necessary for their mothers as well as their fathers to be good animals. A woman who throws herself in the current of competition either for higher literary honors, or in the professions, or in business, cannot for a long time remain a healthy animal, and therefore cannot be a healthy mother, and consequently cannot bear a healthy offspring. Hence Napoleon's reply to Madame De Stäel was correct, when he stated that a woman's proper sphere in life is to be a mother. If Napoleon's answer was correct—and we have no reason to doubt the correctness of the answer—then it follows that to be a mother is the proper sphere of woman, and any education that would lead a woman to be other than a healthy mother, will be not only detrimental to her own offspring, but will finally affect the offsprings of the nation. Dr. Emmet says that one effect of this higher education of women, of which we hear and read so much, will be to hinder those who would be good mothers of men from being mothers at all. In its full sense, says Herbert Spencer, the reproductive power means the power to bear a well developed infant, and to supply that infant with the natural food for the natural period. Most of the flat-chested girls who survive their high-pressure education are unable to do this. Were their fertility measured by the number of children they could rear without artificial aid they would prove unable to do this. It might be added parenthetically, that one effect of this higher education of women in this country is the increase of the number of nursing-bottles. It might be interesting to the advocates of such an education to know how rapidly the nursing-bottle is gaining admittance for use in families of America. According to a Paris letter, since his recent centenary celebration, M. Chevreul has received hundreds of letters from all parts of his country asking him for the secret of his strength, with minute inquiries as to what he eats and what he drinks; when he goes to bed and rises; how he exercises, and so on. To all these inquiries the old scientist replies through the Paris press that the secret of his long life consists of two words: "good health." For this gift he says he is indebted to his parents, for which he thanked them in the dedication of his works published in 1870.

The descendants of those now living in large cities will be ultimately placed on the descending scale of

development if they and their descendants continue to remain denizens thereof, for it has been said, and I believe observation bears out the truthfulness of the assertion, that if an embarriment were placed around a large city preventing healthy, robust recruits from the country, the inhabitants of such a city would become extinct before many generations.

In these times of such a craze for wealth, and power, and fame, the powers of the intellect are so pressed at the expense of the body that endurance ceases, causing in many wrecked constitutions, if not premature deaths. With such there should be called a halt, and less work and more recreation before it is too late, if they would prevent themselves and their posterity from being placed on the descending scale of development. The great importance of proper and wise selection in marriage should be indelibly impressed upon the young, soon to become fathers and mothers not only of this, but of all future generations, at the home firesides, at the schools of education, and from the pulpits. It is a question which is of vastly more interest and value to the American citizen, if he wishes to have transmitted to America's posterity America in the ascending scale of development, than all the mathematics and languages that might be taught in our schools of education, and all the dogmas and isms that might be proclaimed from our pulpits. Dr. Samuel D. Gross, shortly before his death, in an address at the dedication of the McDowell monument, after discussing the importance of skilful and successful laparotomy operations, skilful and successful operations for stone, and skill and success in other capital operations, said: "But the question of skill and success in capital operations sinks into insignificance compared with the great problem of the people's welfare." He further said: "The day has arrived when the people must be aroused to a deeper and a more earnest sense of the people's welfare, and suitable measures adopted for the protection as well as the better development of their physical, moral and intellectual powers. This is the great problem of the day, the question which you, as the representatives of the rising generation of physicians, should urge in season and out of season upon the attention of your fellow citizens; the question which alone and beyond all others should engage your most serious thoughts and elicit your most earnest coöperation."

Consequently, no father should suffer his son or his daughter to marry a person who could not present him with a satisfactory certificate from a competent physician as to the physical fitness of that person for marriage. No license should be granted by county or State officials to any individual without a like satisfactory certificate. In fact, the State Board of Health, in each State, composed of competent physicians, after careful examination, should issue such certificates to applicants. The family history of candidates for matrimony should be well studied by parties most interested, and by physicians granting such certificates. If more attention were paid to proper selection, and to a correct system of education of the people's physical, intellectual and moral powers, there would be no need for so many eleemosynary institutions, which are now dotted thickly all over our land; there would be fewer courts of justice needed, and consequently fewer prisons. Much suffering would be prevented; there would be happier homes, and in the end America would be populated by a more robust, a more intellectual, and a more noble people. By our present mode of selection, I might say, as I wrote on a kindred subject six years ago, that if it were not that every birth is a regeneration, and were the constitutional diseases which diseased parents transmit to their offspring not modified by an inalienable bequest of an older world, and by the redeeming instincts which our All-Mother grants to every new-born child on earth, the people of the world long ere this would have become extinct. Are we not aware of the fact that a powerful people once inhabited this fair land of ours, known as the Mound Builders? We do not know that the Indians, a powerful race, did inhabit this country in years gone by. Where are the Mound Builders now? and where is the Indian race? Then, since these two once powerful races have disappeared from our land, does it not behoove us to use all proper means, to throw out all possible safeguards that God and nature have placed in our hands, to preserve this great American people from eventually being placed on the descending scale of development, and consequently following in the footsteps of their predeccssors, the Mound Builders and the Indian races?

THE GALVANIC CURRENT IN THE TREATMENT OF CERTAIN FORMS OF CATARACT.

Read before the Chicago Society of Ophthalmology and Otology, February 8, 1887,

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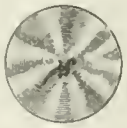
The following extract is from Erb's "Handbook of Electro-Therapeutics:" "Among diseases of the lens, cataract has been drawn recently into the field of electro-therapeutics. Neftel created no little excitement in the ophthalmological camp by a report of two cases of undoubted beginning cataract, in which all the symptoms of the cataract were relieved by methodical galvanic treatment, and visual power restored completely. After a sharp criticism of these statements by Hirschberg, Neftel acknowledged that the opacities of the lens, demonstrable with the ophthalmoscope, had not disappeared entirely, and explained the undoubted improvement of the eyesight to a removal of a molecular opacity, which was not recognizable upon ophthalmoscopic examination. He adds also that galvanic applications exert an influence, though not to any great extent, upon the opacities of ripe cataracts."

This subject is, therefore, still in its infancy, but its importance justifies further careful experiments, mainly with reference to beginning cataract. In 1879, or before, my attention was called to the use of electricity as a remedy for the treatment of cataract. The following case came under my observation:

Mrs. G., aged 53, consulted me for general debility, loss of vision, and catarrhal conjunctivitis. She had been in poor health for seven years, following the climacteric period. There was no evidence of organic disease of the viscera. Her family history was good, with the exception that one aunt, a brother and an older sister had cataract, the brother's cataract following an injury, not of the eye, but a fracture of both limbs; the sister's, at the age of 57 years, following an operation for fibroid tumor. One year before consulting me Mrs. G. had a severe attack of acute bronchitis, which left her greatly debilitated, and from which she had not fully recovered. Right eye, vision equals Snellen No. 8, at 12 inches with correcting glass; left eye, vision equals Snellen No. 5, at 12 inches with correcting glass. Two months before she was able to read with the left eye and thread a needle. The right eye had been out of use for some time, and had been slightly irritated and "weeping." Examination with the oblique illumination gave the results indicated in the following diagram:



No. 1.

As she had for a long time been under the careful management of a good practitioner, and the whole range of tonics and stimulants had been exhausted, I concluded to try central galvanization, as recommended by Beard and Rockwell in their first edition. To my great satisfaction my patient responded to the treatment, and in three months had gained fifteen pounds in flesh and greatly in general vigor. While attending to another member of the family I found my former patient reading, and much to my astonishment found it to be Milton's Paradise Lost, in small print. I again made an examination of the eye under atropine, with the oblique illumination, giving the results as in sketch No. 2.

No. 2.

Soon after this case had passed from my observation my attention was called to the papers of Neftel and others, with the discussion. This and the doubt that these papers engendered, has tended to make me slow in giving to the profession the results of my limited experience and study in the treatment of incipient cataract by the use of the galvanic current of electricity. I doubt if I should have done so now, but for reasons which I cannot here mention, and to prevent being misunderstood by my professional friends and associates. The following are the cases as taken from my notes. I have arranged my cases in the following groups:

Group 1 includes those cases in which there was no improvement, as follows:

Case 1.—1881. Mrs. La L., aged 49. R. V. = $\frac{15}{80}$, L. V. = $\frac{15}{100}$. Peripheral cataract both eyes. Long narrow spikes extending to centre of lenses, no nebulæ. No change in vision for two years. Previous health good. Three years previous had fracture of right arm and amputation of hand at wrist. Treated one month, fifteen sittings, no improvement. Recent letter from son states that, one year ago, glaucoma developed in right eye.

Case 2.—Mrs. K., aged 53. R. V. = 20, L. V. = $\frac{20}{80}$. Right eye + $\frac{1}{10}$ reading V. = Snellen No. 8. Left eye + $\frac{1}{10}$ V. = Snellen No. 3. Peripheral cataract. Many long spikes in both lenses, no nebulæ. Occasional sittings for two and a half months. No improvement. Lately successfully operated.

Case 3.—1883. Mr. H., aged 54. R. V. = $\frac{20}{80}$. L. V. = $\frac{20}{40}$. Peripheral cataract. Two long spikes and many short ones in each lens, also what seems to be a calcareous deposit at the periphera of lenses, much nebular matter. Has atheromatous degeneration of arteries and valvular heart-lesions. Could get no definite results with the ophthalmoscope. Treated six weeks, eighteen sittings. R. V. = $\frac{20}{20}$. L. V. = $\frac{20}{40}$. Six months later R. V. = $\frac{20}{100}$, L. V. = $\frac{20}{80}$.

Group 2 includes cases that have been under observation from four to seven years, in which the improvement has been permanent.

Case 1.—1879. Mrs. McC., aged 50. R. V. = $\frac{15}{100}$, L.V. = $\frac{15}{60}$. Peripheral cataract. Dense nebulæ about lines. Vision had diminished slowly for past 4 months, following carbuncle of the neck; in other respects health good. Under treatment two months, R. V. = $\frac{20}{30}$., L. V. = $\frac{20}{20}$. Six and one-half years later there was no perceptible loss of vision.

Case 2.—1880. Mrs. G., aged 52. R. V. = $\frac{15}{40}$, L. V. = $\frac{15}{60}$. Peripheral cataract. A few short lines and nebulæ extending far toward centre of lenses. Vision had diminished rapidly for two months. Had noticed "weeping" in left eye for six months. Nine months previously had pneumonia. Treated two months, R. V. = $\frac{15}{30}$, L. V. = $\frac{15}{15}$. Extensive spot of choroidal atrophy just at junction of right and left lower field, near ciliary region. Four years later reported no loss of vision.

Case 3.—1880. Mrs. L., aged 57. R. V. = $\frac{20}{60}$, L. V. = $\frac{20}{100}$. L. V. with reading correction + $\frac{1}{10}$ = Snellen No. 10. Peripheral cataract. Long lines and dense nebulæ. Has been in poor health for past four months. First noticed loss of vision two months ago. Under treatment four months, forty sittings, R. V. = $\frac{20}{60}$, L. V. = $\frac{20}{60}$. With correction reading vision equals No. 3, Snellen. Eighteen months later, vision and health improved.

Case 4.—1881. Mr. D., aged 63. R. V. = $\frac{15}{100}$, L. V. = $\frac{15}{200}$. Peripheral cataract. Three long lines and many short ones, with dense nebulæ in each lens. Cannot read with correcting glasses. No change in vision for six months previous. In better health than during preceding winter. Treated two months, R. V. = $\frac{15}{40}$, L. V. = $\frac{15}{100}$. Can read with correcting glasses. Two years later, no perceptible change in vision.

Case 5.—1883. Mrs. B., aged 70. R. V. = $\frac{15}{100}$, L. V. = $\frac{15}{80}$. Left eye with correction reading vi-

sion equals No. 5, Snellen. Right eye, two long lines meeting at centre of lens form a V, and many short lines, all the lines surrounded by nebulæ, more or less dense; left eye, one long line and many short ones. Had malarial fever nine months previously, three months after recovery noticed disturbance in eyes, which was followed shortly by loss of vision. Treated four months, R. V. = $\frac{1}{3}\frac{5}{0}$, L. V. = $\frac{1}{2}\frac{5}{0}$. With correcting glasses reads Snellen, No. 1; can thread a fine needle and do fine sewing.

Case 6.—1883. Mr. H., aged 54. R. V. = $\frac{2}{8}\frac{0}{0}$, L. V. = $\frac{2}{1}\frac{0}{0}\frac{0}{0}$. Could not read with glasses. Peripheral cataract, more marked in left eye than in right. Was examined in January, 1883 (six months previous), with diagnosis of cataract in left eye. Had malarial fever in March, and when convalescing noticed failure of vision in right eye. Under treatment three months, thirty sittings, R. V. = $\frac{2}{5}\frac{0}{0}$, L. V. = $\frac{2}{1}\frac{0}{0}\frac{0}{0}$. Four years later, R. V. = $\frac{2}{9}\frac{0}{0}$, L. V. = $\frac{2}{1}\frac{0}{0}\frac{0}{0}$.

Group 3 includes cases in which there has been complete removal of short lines and nebulæ.

Case 1.—1881. Mr. J. L., aged 49. R. V. = $\frac{2}{4}\frac{0}{0}$, L. V. = $\frac{2}{3}\frac{0}{0}$. Correcting lens for reading + $\frac{1}{8}$. Peripheral cataract in both eyes. Right eye, three long spikes reaching nearly to centre of lens and surrounded by dense nebulæ. Left eye, one long spike reaching to centre of lens, and many short ones; slight nebulæ. General health fair; lately developed large varicose ulcer. Two and one-half months under treatment, twenty three sittings, V. = $\frac{2}{2}\frac{0}{0}$ in both eyes, with + $\frac{1}{1}\frac{1}{2}$ correction reads Snellen, No. 1. Two and one-half years later there was no change in vision.

Case 2.—1883. Mr. L., aged 54. R. V. $\frac{1}{4}\frac{5}{0}$, L. V. $\frac{1}{3}\frac{5}{0}$. Short lines and nebulæ in both lenses; much depressed from loss of property; has labored hard for last four years. Regular daily treatment for three weeks and occasional treatments for two months; at end of two months no lines and no nebulæ visible. Vision normal in both eyes. Two and one-half years later, stronger correcting glasses gave normal vision. No sign of degeneration of lens.

Case 3.—1883. Mrs. B., aged 63. R. V. = $\frac{2}{2}\frac{0}{0}$, L. V. = $\frac{2}{5}\frac{0}{0}$. With correcting glass reads Snellen, No. 2. Had noticed loss of vision R. E. after protracted confinement to house, from injury, L. E., following chicken-pox. After daily treatment for three weeks, could see no lines nor nebulæ in left eye; in the right eye nebulæ had cleared, leaving lines unchanged. Four years later no appreciable change in either eye.

Group 4.—Recent cases in which there has been complete absorption of opacities.

Case 1.—June, 1886. Mrs. M., aged 63. R. and L. V. $\frac{2}{2}\frac{0}{0}$. Reading vision, with + $\frac{1}{8}$ correction, equals Snellen, No. 8. Peripheral cataract both eyes. Consulted for excessive lachrymation, and rapid change of glasses, being able to read but a short time. Three months previously had consulted Dr. ———, who also had diagnosticated cataract. Treated one month, ten sittings, R. and L. V. = $\frac{2}{3}\frac{0}{0}$. No lines nor nebulæ visible; reads Snellen, No. 1, with + $\frac{1}{1}\frac{1}{4}$ correction. Nine months, vision equals $\frac{2}{2}\frac{0}{0}$, and no sign of opacities.

Case 2.—July, 1886. Mrs. F., aged 68. Myopic. R. V. = $\frac{2}{1}\frac{0}{0}\frac{0}{0}$, L. V. = $\frac{2}{2}\frac{0}{0}\frac{0}{0}$. Reading glasses, R. + $\frac{1}{1}\frac{1}{8}$, L. + $\frac{1}{2}\frac{1}{2}$. Slight cataractous radii in both lenses. Has much trouble from loss of sleep, uses chloral at times. Under treatment one month, twenty four treatments, only one or two lines visible at end of treatment. November, 1886, fully recovered; can see no lines nor nebulæ.

In all cases in which I have suggested galvanism as a possible remedy, I have steadily avoided encouragement as to the result, and had it fully understood that the remedy was on trial; though I had long considered it a legitimate treatment. In my first cases I did not make the discrimination that Wells offers as to the rapidity or stasis of development of catatact, for I had not learned to fully measure the change that was produed in conjunction with improvement of vision. It was soon manifest that the great change which took place was not in the already degenerated lens structure, but in that portion which was in a metamorphosic state, *i.e.*, the nebulæ that enveloped the lines and filled the more transparent portion of the lens; this nebular matter is slowly absorbed, leaving the former gray portions of the lens clear and transparent, and the lines clearly marked. I have never seen radii that were already fully degenerated, become absorbed or changed more than could be accounted for by the clearing of the nebulæ. In those cases where we would expect arrested development, there was absolutely no change nor improvement of vision, except in one case; and that was due alone to the improvement of the choroid and retina.

As to the etiology of cataract or opacities of the lens, there can be but one opinion; that it is the disturbance of nutrition, through functional and organic changes in the uveal tract, nerve and retina, and that these changes may be associated with, and are usually due to, some general disturbance of nutrition. In thirty-one cases which I have tabulated from my private work, and twenty-six from my outside or dispensary practice, I have found in more than 90 per cent. of the cases that there was a history of acute disease or an acute exacerbation of a chronic disease, or an exhausting mental depression or depression preceding the disturbance of vision, and in many cases attributed to it by the patients. In thirty per cent. of the cases there was evidence of choroidal degeneration, neuro-retinitis or retinal atrophy; showing that it was not the lens alone that had been or was suffering from disease. Wells says: "It appears most probable that the causes of the loss of transparency of the lens are to be sought in the impairment of nutrition, due to some morbid alterations in the vitreous humor and inflammatory changes in the lens itself."

The therapeutic action of electricity is threefold: Mechanical, tonic, and catalytic. We have to deal in this connection only with its tonic and catalytic actions. It is tonic from its action on the pneumogastric and sympathetic; catalytic from its electrolytic action, as manifested by the rapid changing of the nebula long preceding the manifest results in the general system.

Beard and Rockwell say: "Indirect constitutional effects result from localized electrization of nervous centres, especially from galvanization of the brain, spinal cord and sympathetic of the cervical region." The physical effects of electricity passing through the body, are heat, transference of substances from one pole to the other, and modification of endosmosis and exosmosis. In the structural changes which take place, we have the effects of the catalytic or chemical most markedly manifested. Electrolysis of organic substance starts a process that continues long after the current has ceased to flow. Dr. F. H. Martin, in his paper on "Electricity in Gynecology," page 10, says: "I have worked on the principles enlarged upon in the first part of this paper, viz.: 1. That a galvanic current of moderate quantity, passed through a soft tissue of the body, produces electrolytic action all along its course. 2. That a process of rapid absorption is produced in the parts so acted upon. 3. That normal tissues, while the least susceptible to the current, and therefore least liable to be chemically decomposed, are, if decomposed and absorbed, almost immediately replaced by the inherent property of healthy tissue to reproduce itself. 4. That pathological tissue is usually of lower vitality than normal tissue, is more easily decomposed by the current, and when it is decomposed and its absorption accomplished, it has not the power to reproduce itself."

By one who has used electricity in general practice and noted the continuous improvement of patients months after the treatment has been discontinued, it can readily be understood why frequent séances are not required in a large majority of cases.

My experience would lead me to associate the improvement in vision directly with the visible local changes. If the cataract is due to the disturbance of nutrition or change in the vascular supply, and in a large number of cases preceded by a marked disturbance of the general health, is it not fair to suppose that in those cases cited by Bull and others, where there is arrested development, delayed maturing or spontaneous absorption, that the cause for the change may lie in the improvement of nutrition? That the remedy fails in a certain percentage of the cases, or in fact all the cases under treatment, may not be the fault of the remedy, but in the selection of the cases to be treated. *In all cases in which the disease is progressive*, as indicated by the fat granules and nebula, where electricity is well borne, where the choroid and retina are not greatly degenerated, and where there are no complications of cirrhosis of kidneys or liver, diabetes or organic disease of the heart or lungs, *improvement may be expected.* The cases in which improvement is not to be expected are those in which vision has remained stationary for some time, and where there are structural changes in the choroid and retina. The opacities of the lens treated by me with electricity, are of the senile forms of cataract, commencing at the periphera and extending towards the centre in the shape of radiating lines or spikes. In the progressive form the lines are surrounded by, and the inter-space more or less filled with, an aggregation of dots and nebula of gray matter. In one case there was marked yellow deposit under the anterior capsule.

The battery to be used should consist of a number of medium sized cells, giving a steady, constant current. The special battery manufactured by McIntosh & Co., or the battery invented by Felton, I think are the best adapted to this purpose.

The treatment may be given in this way: The electrode should be first freely moistened; the negative placed over the eye, the positive at the nape of the neck, at the angle of the jaw or over the stomach. Three or four cells should first be turned into the circuit, followed by one, two, three or four more, until a slight vertigo is experienced. then gradually reducing the number of cells; the whole sitting not occupying more than five to ten minutes. The treatment may be at first given daily, and gradually decreasing to once or twice a week. In some cases I have been obliged to use a very mild current, and in others as high as eighteen elements, and in a few cases the galvanic current was not well borne at first, but a few daily treatments with the induced current rendered my patient less susceptible or sensitive, and I was enabled to use the galvanic current with good results.

PERINEPHRITIC ABSCESS; OPERATION; RECOVERY.

BY U. O. B. WINGATE, M.D.,

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Acute inflammation resulting in suppuration in the connective tissue surrounding the kidney must be a rare disease. The literature in the medical journals is exceedingly scant, and but brief mention is made of the affection in the books. Yet we can hardly expect it to be infrequent when we consider its etiology. Injury is supposed to be the most frequent cause; next, exposure to cold, which is questioned by some, but undoubtedly is a cause; previous suppurative nephritis or pyelitis; extension of pelvic cellulitis; operations on the rectum; inflammatory affections about the bladder; psoas abscess; typhlitis and perityphlitis. Well authenticated cases have been reported in children, although by some this has been denied.

The symptoms are said to be local pain, shooting downwards; chilliness, followed by fever; malaise; nausea; anorexia; coated tongue; rigors and profuse sweats; emaciation; obstinate constipation. Deep-seated fluctuation may be detected, but it may be very late. There may be a tumor, but that may appear very late. Pus usually points in the lumbar region, or it may rupture into the bowel, or into the peritoneal cavity, in which case death would soon follow, unless the condition was early diagnosticated and abdominal section resorted to at once.

The differential diagnosis is to be made from hydronephrosis; from echinococcus; from cancer; and from pyelitis with pyonephrosis. In the early stages the diagnosis is extremely difficult, especially in children;

and by good authority is pronounced impossible in the absence of a tumor. My experience with this disease is limited to a single case, and its history, difficult diagnosis, course and termination seem to be worthy of a pretty full record, and especially so as but a very few cases can be found to which more than a passing notice is given.

Miss P., of Massachusetts, aged about 30 years, was first seen by me as a patient on August 28, 1883. She was a tall, spare brunette, and had always had fairly good health. She had been ill several days before I was called. Nearly a week before she had been on an ocean excursion, had been in the ocean bathing and was chilled at the time—came home and was taken ill. There is a constant dull pain, uninfluenced by motion or position, in the upper part of the right lumbar region, and inclined to the front. Slight tenderness over this region and extending over the abdomen. Bowels quite regular. Marked anorexia. Tongue coated white. Slight nausea; no vomiting; no urinary symptoms; no chills. Menses have been regular and normal. Pulse 100; temperature 101° F. Patient sits up part of the time.

August 29. Bowels moved by a cathartic to-day. All the symptoms the same.

September 1. Side more tender and painful, requiring an opiate. Anorexia is a marked symptom. Pulse 100; temp. 99.5° F.

September 4. Not as well. Pain shooting down right thigh, and there is some tenderness in the right groin. Anorexia. Pulse 100; temp. 101°.

September 6. Menstruating at regular time. Despondent; tired. There is less pain, no opiate required. Anorexia marked. Tenderness still a prominent feature over the right side and in the right groin; no swelling anywhere. Pulse 80; temp. 100.5° F.

September 7. Less tenderness of abdomen—otherways the same. Pulse 88; temp. 101.8° F. As I was to be absent from town for a few days, I placed the patient under the care of my neighbor, Dr. G. J. Townsend.

September 12. I resumed charge of the case again. Tongue cleaner and patient appears some better generally. There is some pain complained of in the right hip. She cannot walk well on account of the pain in the hip. Less pain in the side. Sweats profusely and complains of weakness; anorexia still marked. Pulse 80; temp. 100° F.

September 14. Slight icterus, more prominent about face and neck than elsewhere. Tenderness over side and abdomen; pain in right hip when walking. Pulse 80; temp. 100° F.

September 17. Patient still sits up part of the time. Tongue quite clean and moist, but anorexia as marked as ever. Skin less yellow; tenderness of right side and abdomen still prominent; pain in the hip on motion; sweats profusely nights. Afternoon pulse 100; temp. 102° F.

September 21. Slight chill last night for the first time. Pain in the hip and groin. No swelling could be found. Bowels moved quite regularly. Pulse 90; temp. 101° F.

September 25. Pain in the hip is constant—she says it is "inside the hip." Pulse 100; temp. 100.1° F.

September 27. One month after my first visit patient rode out, it being a pleasant day; she thinks she feels better for it. Pain in hip some less. Pulse 90; temp. 100.5° F.

September 30. In addition to the other symptoms the right thigh is beginning to be flexed, and cannot be fully extended. There is more tenderness over the right kidney, and I think some little fulness in that region. Up to this time no satisfactory diagnosis has been made. My notes at this time read: "Abscess? malignant disease? tumor? floating kidney? What?

October 2. A consultation was held with a gentleman of large experience, and the physician who officiated at the birth of the patient. A careful examination was made, and the following symptoms summed up in their order of prominence: 1. A long-continued, persistent anorexia. 2. Tenderness in the right lumbar region, first extending over a greater part of the abdomen, later becoming more marked over the right kidney, with some fulness in that location, accompanied by a constant dull pain in the right hip and groin, and flexion of the thigh. 3. Fluctuating, low, but persistent fever, accompanied with but one or two very slight chills, but with profuse perspiration at times. 4. Emaciation quite marked. The urine, which has been free and without abnormal qualities before, is now three pints in quantity in twenty-four hours, S. G. 10.20, contains a trace of albumen, a small amount of pus and a few epithelial casts. Diagnosis hinges between deep-seated abscess and malignant disease, the consultant inclining to the latter, as I perhaps would have done had I not watched the case carefully from day to day. Prognosis guarded. Treatment continued, namely: opiates sufficient to relieve pain, with quinia in tonic doses, and all the nourishment she could be made to take, with some alcoholic stimulants.

October 3. Much pain in the hip, with a "twinge" down the limb at times, a spot over the right kidney very tender. Pulse 104; temp. 102.1° F.

October 4. Pulse 112; temp 103.5° F.; other symptoms the same.

October 5. Patient looks haggard—is restless; asks if she can get well; cannot lie on left side, decubitus mostly dorsal with limbs drawn up. Vomited once this morning. Pulse 91; temp. 101.6° F.

October 7. Had a restless day yesterday; perspires profusely when asleep. Is taking many eggs for nourishment, which are forced. Pulse 100; temp. 100° F.

October 8. Much pain caused by defecation, which is assisted by enemas. Bowels tender and somewhat tympanitic. Pulse 96; temp. 101° F.

October 9. Has a sharp pain in the right lumbar region; cannot lie on the right side on account of a pulling sensation. Pulse 88; temp. 101.8° F.

October 10. Slight puffy appearance about face and eyes noticed for the first time, but urine is free. Slight chill yesterday, followed by flushed face; seems dull and low-spirited. Pulse 104; temp. 102° F.

October 11. Perspires much of the time; tongue clean and red; anorexia as prominent as ever. The

fulness over right kidney is decidedly more prominent and very tender, but I can get no fluctuation. Percussion flat. Less pain in the hip, but requires opiates. Pulse 101; temp. 101° F. A large flaxseed poultice was applied over right kidney.

October 13. Consultation was again held. Night sweats are profuse. The enlargement over right kidney is more pronounced, but fluctuation could not be obtained. Pulse 95; temp. 103° F.

At this point I suggested aspiration, but the consultant was in favor of waiting, and was inclined to the diagnosis of very serious if not malignant disease of the kidney, and a grave prognosis. We agreed to wait a few days longer before resorting to surgical measures.

October 14. I can get a slight wave of fluctuation, and am more convinced than ever that there is deep-seated pus. Patient very tired; there is considerable pain. Pulse 105; temp. 103.9° F.

October 15. Forty-eight days since my first visit. Consultation again—patient much the same as yesterday. Fluctuation being evident, it was decided to explore the tumor, which was now quite prominent over the right kidney. Patient was etherized, and I passed an aspirator needle well into the swelling and obtained pus; it was too thick to be evacuated through the aspirator, and I withdrew the needle, made a longitudinal incision over the most prominent part of the swelling, dissected carefully down about one and a half inches and came to the sac, then passing in a director made a free opening, and evacuated about eight ounces of pus. A drainage-tube was inserted and the opening dressed as near antiseptically as the circumstances and surroundings would permit. Patient rallied from ether well, but was very weak.

October 16. Comfortable, but weak. An enormous amount of pus has been discharged. Pulse 110; temp. 102°. The cavity was well syringed out with a 1–40 solution of carbolic acid, and the opening redressed as before.

October 17. Pus discharging very freely; patient quite comfortable. Pulse 100; temp. 99.6° F. Opening dressed with oakum.

October 18. Some diarrnœa; abscess discharging freely. Pulse 92; temp. 100° F. Redressed as before.

October 19. Discharge of pus diminishing. Diarrhœa checked with bismuth and morphia. Thigh can be extended to full extent. Syringed cavity and redressed with oakum.

October 27. Since last note patient has been doing well. Abscess has discharged a large amount, but discharge is now growing less. Opening has been syringed daily and dressed with oakum. Patient's strength has been well sustained on iron and quinine in tonic doses, with all the liquid nourishment she could bear. Last night had a chill—cause obscure. Pulse 120; temp. 103.2°. A larger drainage tube was inserted, cavity thoroughly syringed out with carbolized solution, 1–40. In the afternoon a consultation was again held, but no cause of the chill was apparent. The pulse had fallen to 100 since morning, and temp. to 101.8° F.

October 28. A slight erysipelatous blush was present around the opening, which undoubtedly accounted for the chill and rise of temperature and pulse. Pulse 116; temp. 102° F. Opening syringed as before, and dressed with a lead and opium solution carbolized.

October 30. Erysipelatous blush gone, abscess discharging but little; cavity much smaller. Pulse 100; temp. 99.5° F.

November 3. Very slight chill this morning; abscess redressed. Pulse 100; temp. 100° F.

November 4. Pulse 80; temp. 98.8°. Very little discharge.

November 7. Drainage-tube removed. Patient improving fast.

November 13. Slight discharge yet. Patient sits up some of the time. Pulse 80; temp. 98.5° F.

November 23. Opening completely closed. Patient discharged well, nearly three months from my first visit. I have no doubt that the chill and erysipelatous blush were due to a want of asepsis, and although it did not prove a very great obstacle to overcome, a greater neglect might have proved disastrous.

IMMOBILIZATION IN HIP-JOINT DISEASES.

BY B. M. GRIFFITH, M.D.,
OF SPRINGFIELD, ILL.

Mr. A. A. B., aged 32 years, Canadian parentage, about four years ago received a severe fall upon the right hip when alighting from a moving train. To all appearances he soon recovered from the immediate effects of this injury, About two years afterwards his hip-joint commenced paining him upon excessive exercise or fatiguing use of the limb, and in the course of another year he complained of pain in the knee-joint. This was the history of the case when I first saw it in August, 1886. The right limb was apparently three-fourths of an inch longer than its fellow, and the right foot slightly everted. He complained of excessive fatigue in the joint on walking, especially if the ground was rough, and if he accidentally stubbed his toe the pain in the joint was quite severe. Upon sneezing, he would instinctly seize the affected limb in order to lessen the pain caused thereby.

No hereditary taint was discovered by examination of the patient's history. The general health was quite good. On manipulating the limb, the hip-joint was found rather sensitive; inversion limited. When lying on his back the patient was unable to place the heel of his right foot on the toes of his left; the pelvis was also tipped considerably, and the pain was quite marked when the limbs were fully extended in this position. The pain was lessened by flexing the thigh on the abdomen at an angle of about twenty degrees, and slightly everting the foot; and by so doing placing the pelvis flat on the floor. At no time was pain produced by striking the heel of the foot while the limb was extended.

The plan of treatment entered on was one suggested to the patient by Dr. Alfred Bray, of Minneapolis, Minn., *i.e.*, the application of a plaster of-Paris cast to the pelvis, and thereby immobilizing

the joint. The cast was applied as far up the body as the xiphoid cartilage, and extended down the affected limb to the knee, making it especially strong on the groin. The cast was applied by having the patient stand on a stool, with the limb slightly everted and somewhat advanced, thereby placing the limb in a comfortable position. The patient was afterwards placed on a canvas cot, and a double inclined plane and a slight weight used. In this position he was entirely comfortable, and commenced improving from the start, cod liver oil and comp. syrup wheat phosphates being the only medication.

Patient was kept on the cot for twelve weeks, when the cast was removed. He complained terribly of muscular soreness for several days. The limb can now be moved in all directions, flexion and adduction being slightly compromised. No pain in either knee- or hip joints. The movements, while slightly limited, are more powerful than formerly, and are getting stronger. The pelvis is also improved in position. It has been four months since the cast was removed, and neither pain nor any of the old sensations have been felt in the joints; and the patient walks with an almost imperceptible limp, while he was very lame before the treatment.

This case I offer as an illustration of the most effective method of treating hip-joint troubles when seen under such conditions, believing it to be more efficacious than the use of braces.

235 S. 5th Street.

MEDICAL PROGRESS.

Antiseptic Midwifery.—In a report by Dr. K. Inoieffs of the work done in the Lying in Institution in connection with the Golitsinski Hospital, in Moscow, for the year 1886, the advantage of antiseptic midwifery, which is strictly carried out there, is evident, as out of 541 cases there were but two deaths. Some of the statistics, which are very carefully kept, may be of interest. The largest number of births occurred, as it is popularly believed they do, at night, 145 taking place between midnight and 6 A.M.; the numbers corresponding to the remaining three-quarters of the twenty-four hours being 131 from 6 A.M. to noon, 107 from noon to 6 P.M., and 144 from 6 P.M. to midnight. There were fourteen abortions and nine cases of twins; three births took place in the street. Of the remaining 501, 478 were vertex presentations, fifteen breach, and eight transverse. In nine of the fourteen cases of abortion the ovum was removed mechanically. When there was considerable hæmorrhage and the os was not dilated, a hot vaginal injection of carbolized water was given which was, as a rule, successful. Twice, a plug consisting of a long strip of cotton-wool moistened with glycerine and iodoform was introduced by means of the speculum, as much as possible being inserted into the cervical canal, and subsequently, when the os was sufficiently patent, the finger was introduced and the uterine contents removed. In one case there was a slight amount of perimetritis, and in two a single rise of temperature. In one case a spatula was cautiously used to assist the irrigation, and once the contents were removed with the help of a sharp hook. Apart from cases of placenta prævia and abortion, there were twenty-nine cases of hæmorrhage, six of these occurring in primiparæ; six took place during the first and second stages of labor, the rest in the third stage and post-partum. The treatment adopted was, during the first stage, to plug, and when the os was sufficiently dilated to rupture the membranes. If there was rigidity of the os, narcotics were given. When uterine atony was the cause, massage, the application of ether to the abdomen, hot injections, and (after the birth of the placenta) ergot was resorted to. As to operations, episiotomy, or a double V-shaped incision of the perineum was performed five times, no sutures being inserted afterwards. Twice the os uteri was incised; twice the prolapsed cord was replaced; perineal sutures were required in twenty cases. In the performance of the operation the most careful antiseptic precautions were taken; in sixteen cases the union was complete. Retention of membranes required the introduction of the hand into the uterus once, but in fourteen cases the placenta had to be artificially extracted, being completely adherent once, and partially so thirteen times. Labor was induced prematurely for contracted pelvis three times, twice by the injection of water at 28° R. (95° F.) through a tube passed into the cavity of the uterus, between the uterine wall and the fœtal membranes; in the third case it was induced by the introduction of an elastic sound into the uterus. Podalic version was performed eleven times, and the forceps applied fifteen times. Craniotomy was performed twice.—*Lancet*, May 7, 1887.

Physiological Action of Spigelia.—Dr. H. A. Hare, of the University of Pennsylvania, in a study of physiological action of spigelia, or pink-root, says: On the cardiac muscle it acts as a direct depressant poison, for if it be injected into the jugular vein in such a way as to come suddenly in direct contact with the heart the movements of that viscus almost instantly cease. Further than this, if the excised heart of the frog is dropped into a strong solution of the drug its movements are almost immediately stopped in a condition of diastolic arrest, although the relaxation is not very marked. When a frog receives as much as twenty minims of the extract of spigelia, the heart is slowed to a considerable extent, as much as ten or fifteen beats per minute, and diastole, while not increased in length, is nevertheless very full and marked. The change from systole to diastole is abnormally rapid, so that the heart in one moment in systole springs with a quick movement to its full diastolic condition. Systole, however, gradually increases on diastole, in much the same manner as in digitalis poisoning, until finally the greater portion of the ventricle fails to dilate, the apex being tilted more and more forward while the ventricular walls are powerfully contracted. As the systolic pauses increase, the diastolic movements decrease in volume, until finally the heart dilates no more than it does

normally. At this time the powerful and heretofore spreading systolic contractions seem to lose power and the heart shortly stops all movement in a semi-relaxed state. Experiments on the warm-blooded animal show that on the injection of one drachm, or less, of the drug, the action of the heart is very rapidly slowed in its movements, and that this slowing is chiefly due to central inhibitory stimulation is shown by the fact, that if the vagi be cut before the drug is given this slowing does not occur, and also if after the drug has slowed the heart the vagi be cut, the inhibition no longer remains. That the fall of arterial pressure produced by this drug is due in great part to the cardiac depression which it produces is proved, since asphyxia will cause a rise in pressure, and that the pressure returns nearly to normal as soon as the heart gets rid of the drug which has been suddenly injected into it. On the respiratory centre the drug seems to have a still more depressing influence, respiration ceasing some moments before the cardiac arrest.—*Medical News*, March 12, 1887.

LIGATURE OF THE EXTERNAL CAROTID ARTERY.—In a paper describing three cases of ligature of the external carotid artery, in two of which both vessels were tied simultaneously, DR. JOSEPH D. BRYANT draws the following conclusions:

1. Ligature of the external carotid artery, together with dependent ligature of the branches arising from the first inch of its course, is a safe and commendable operation.

2. When the facial and lingual arteries do not arise singly, or by a common trunk from the first inch of the course of the external carotid, the branches arising at the point of bifurcation of the common carotid should be tied.

3. Simultaneous ligature of both external carotids is a rational preparatory measure for operations involving the parts supplied by their branches when dangerous hæmorrhage is feared. If the pharynx be involved, the ascending pharyngeal branches should be ligatured also.

4. Simultaneous ligature is advisable as a final expedient to diminish the rapidity of the development of extensive malignant growths when they are nourished by the branches of the external carotids.

5. Ligature of one or both of the external carotids for the cure of aneurismal formations of the branches of the same is not feasible as an independent curative measure.

6. Ligature of the common carotid should not be done for the cure or for the arrest of morbid conditions involving the external carotid or its branches, except as a final resort.—*Medical News*, May 14, 1887.

CARBOLATE OF MERCURY IN SYPHILIS.—DR. KARL SHADEK, of Kieff, being anxious to try the effects of carbolate of mercury, which has been strongly recommended in syphilis by Professor Gamberini, requested M. H. Brandt, a pharmacist in Kieff, to prepare some for clinical use. This he did by precipitating a very dilute solution of bichloride of mercury with a concentrated alcoholic solution of carbolate of potassium. A yellowish precipitate was obtained, which, after being frequently agitated with the liquid for twenty-four hours, assumed a whitish appearance. It was filtered and washed with distilled water till the washings showed no traces of chloride. It was then transferred to a fresh filter paper and dried under a bell jar. In this way a nearly white tasteless amorphous substance was obtained, which was scarcely acted upon or dissolved by cold, but was readily soluble in boiling, hydrochloric acid. The name given to it by Dr. Shadek is "hydrargyrum carbolicum oxydatum," and he has been using it in his private practice for several months. At first he gave it in the form of pills, one of which, containing about an eighth of a grain, was ordered three, or occasionally four times a day. It was well borne, and did not interfere with the digestion. In some cases the treatment was continued for six or eight weeks, without producing colic or other disagreeable symptoms. The total number of syphilitic cases in which it was given internally was thirty-five (twenty-six men, six women and three young children). In five of these there was swelling of the gums and salivation. Mercury was found in the urine after the third dose. Its therapeutic value was especially remarkable in macular and tubercular syphilides and in syphilitic psoriasis of the palm and the sole. Syphilitic rash and slight relapsing forms yielded to the treatment in from two to four weeks; in syphilitic affections of the mucous membrane, and in papular and pustular eruptions, from four to six weeks were required. Multiple enlargements of glands were but little affected by it. In the case of children from 2 to 4 years old, doses of about the fifteenth of a grain were well borne twice daily.—*Lancet*, May 7, 1887.

TRANSPARITONEAL NEPHRECTOMY.—At a recent meeting of the Paris Surgical Society, M. TERRIER communicated a note on a new method of performing transperitoneal nephrectomy. The abdomen is opened in the middle line, and the intestine pushed aside so as to uncover the peritoneal membrane covering the kidney A verticle incision is then made in the membrane, the edges of which are held back with clamps. After removal of the tumor, the pedicle and the ureter are tied and brought forward through the peritoneal incision to the abdominal wound, where they are secured. In this manner the peritoneal cavity is closed on all sides. M. Terrier claims that this operation does not necessitate drainage through the loin, as has generally been supposed. *British Medical Journal*, May 7, 1887.

XYLOL IN SMALL-POX.—OTVOES has used xylol in 315 cases of small pox with excellent results. This substance is recommended by Zuelza as an antiseptic; it coagulates albumen. Otvoes administered it in wine, in doses of 2 to 3 grammes a day. The total amount given was sometimes 24 grammes. Otvoes gives the following formula for the administration of xylol: R. Pure xylol, 3 grammes; menthol water, distilled water, āā 50 grammes; cinnamon syrup, 10 grammes. One spoonful every two hours. *British Medical Journal*, May 7, 1887.

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THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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PUBLICATION OFFICE OF THE JOURNAL.

We again remind the members of the Profession who may be in the city during the meeting of the American Medical Association next week, that the business office is at No. 65 Randolph street, corner of State, in which they will find a clerk at all hours ready to wait upon them. Also, that THE JOURNAL printing office is at No. 68 Wabash avenue, only one square from the Central Music Hall, in which the Association will meet, where the extra volumes of the Transactions, published prior to 1883, are to be found and are for sale. Mr. White, in charge of that office, will be prepared to give any information concerning them that may be desired.

MECHANICAL TREATMENT OF HIP-JOINT DISEASE.

Of late years the attention of the profession has been so much directed to the operative treatment of hip joint disease, that the more conservative method of treatment of the affection has not received the attention merited by the attainable results. It is with pleasure, therefore, that we notice an interesting paper read before the New York Academy of Medicine, on May 5, "On the Ultimate Results of the Mechanical Treatment of Hip joint Disease. An Analysis of Fifty-one Cases, occurring in the Service of the New York Orthopædic Dispensary and Hospital," by Drs. Newton M. Shaffer and Robert W. Lovett, which may be found in the *New York Medical Journal*, of May 21. The cases upon which the report was based were all *dispensary* cases, no hospital, private, or other cases being considered, and no cases in which the hip affection has been treated by other than mechanical means. It will be seen at once that the most difficult of all cases, dispensary, were selected. With the results obtained it is the object of the paper to show that it is not only possible but comparatively easy to treat hip-joint disease successfully, and satisfactorily with proper facilities; by which is meant a well-equipped shop and a corps of mechanics to make, repair or alter the necessary appliances, and the coöperation of out-door visiting surgeons. A further object of the writers is to show that it is exceptional that homeless or illy cared for children require *prolonged* hospital care in hip-joint disease; and to show that a well-equipped orthopædic dispensary, if properly conducted, can do the work of several large hospitals at far less cost.

In order to arrive at positive and ultimate results when the investigation was begun, no case was to be considered which had not been under the care of the institution from the time of entry to that of final discharge; none which had been entered as "discharged cured" after a final examination; no case which had not been "discharged cured" at least four years prior to the investigation; none except those which presented unmistakable signs of the disease at the first examination; none which had not been at least two years under treatment; none which were not seen or examined after investigation was begun; and all cases within these exclusive conditions were to be classified and reported. These conditions, of course, excluded many interesting and valuable cases, but had the latter been included the facts brought out might have had less value. The general plan of treatment was as follows: In each case reported a long Taylor traction-splint was applied soon after the first examination, and the parents or some friends of the patient were instructed in the use of the apparatus. Unless recumbency was necessary to overcome a malposition of limb, or unless the symptoms were so acute as to demand rest (in which case the patient was visited at home by the visiting surgeon) the patient was allowed almost unlimited exercise in the open air. He was seen at the dispensary every week or two for observation and readjustment of the apparatus, etc. If the condition required recumbency for a month or more, and his home was inadequate, he was placed in one of the wards of the institution, to be removed and returned to the dispensary service as soon as possible.

The aims of the treatment were to: 1. Overcome

by mechanical means any acquired deformity existing before treatment was begun. 2. Protect the diseased joint from traumatism. 3. Permit the patient to have almost unrestricted out-door exercise. 4. Maintain that position of the limb which would reduce deformity to the minimum if ankylosis occurred. Except with the occasional opening of an abscess no operative measures were undertaken in any case. "As a matter of experience abscesses connected with a suppurating hip-joint did no better under antiseptic measures than those opened by simple incision, and neither did so well as those which were allowed to open spontaneously. Cold abscesses were allowed to take their own course, unless they were in a location which interfered with the use of joint protection." The patients were carefully watched, and when they failed to report at the dispensary, they were requested to call, or were visited.

What were the results? Of the 51 cases treated 4 had died, 2 of meningitis, and 2 of pneumonia. Six had relapses, after being under treatment 2½, 4, (3), 5, and 7 years. The remaining 41 were seen and carefully examined, except 2, who were reported to be in excellent health. The 39 were carefully examined and measured. These 39 had been discharged as cured between 1875 and 1882. They had been under treatment from 2 to 8 years; they had had hip-disease from less than 6 months to 9 years (2 for an indefinite period) before treatment was begun. Abscess occurred in some stage of the disease in 27 cases. From this paper which is worthy of the most careful study, it appears that the amount of shortening of the leg is not dependent on the presence or absence of abscess, that it is less in children who are cured before 10 years, and that it apparently increases after that age is passed. It also appears that shortening increases slightly after the joint disease is arrested, which seems to prove that the affected limb did not grow so fast as its mate.

Muscular atrophy is always present in hip-joint disease. It persists after the disease is arrested and the apparatus is removed, and it may often improve after treatment is stopped, but never wholly disappears.

The amount of motion in the joint when the disease is arrested and the apparatus is removed is very apt to diminish somewhat in the course of years; but recovery with perfect motion is not impossible, or indeed unlikely. The presence or absence of abscess has no apparent effect on the amount of motion obtained.

Ankylosis being the result most likely to occur, it is important to study the ultimate position of the limb, so that, if ankylosis occurs, the most useful position will result.

Adduction, rather than flexion, is the ultimate position to be avoided, and adduction is apt to occur after the joint seems to be free from inflammation and the apparatus is removed.

Non-deforming club-foot, or even a considerable degree of acquired talipes equinus, may occur when there is much shortening of the leg with flexion of the thigh.

True lateral curvature with rotation occurs very exceptionally, if at all, as the result of even great inequality in the length of the lower extremities, only one case being found in the series, and that not a true rotation curve.

A comparison of the results reported with the published results of excision of the head of the femur leads the authors of the paper to the conclusion that the conservative methods of treatment here described promise much better ultimate results than excision of the joint, aside from the greater mortality attending the operation.

The authors summarize the results of their investigations as follows: Of 51 patients discharged as cured over four years ago, 4 have died, 6 have had relapse, and 41 have apparently been cured of the disease. Of the 4 who died, 2 only had presumably tubercular disease, the other 2 dying of an acute lesion. Of the 6 who had relapse, 2 are now under active treatment with a prospect of a speedy cure, and 2 have been cured a second time. One has been in bed a year after excision of the joint, the other is on crutches. Of the 41 who recovered there is not a single individual who is incapacitated from doing a full day's work at his or her trade or occupation. Only one, a boy who had suffered from both Pott's disease and hip-joint disease, used a cane, and none used crutches. There are, among those who recovered, printers, glaziers, machinists, errand-boys, shop girls, dress-makers, and many children attending the public schools—all at their work and none with evidences of active tubercular disease or any serious incapacity arising from the condition for which they were treated years before.

CLASS MORTALITY IN THE UNITED KINGDOM.

The causes which govern the mortality among different classes and ranks in the United Kingdom form the subject of an interesting paper which has just been read before the Statistical Society by MR.

Noel Humphreys, a well-known authority upon topics of this character. The marked decline in the English death-rate during the last eleven years is accepted as proof that the public health is better cared for now than formerly, and that the large expenditure upon sanitary works is bringing substantial return for money in the shape of improved health and a prolongation of human life. The death-rate in the City of London a few weeks ago was almost down to vanishing point, the mortality per thousand of the population being the lowest the city has yet known. Taking the whole country, however, not only are there local variations in the death rate, but the mortality varies according to the grade of society to which the statistics refer.

What may be termed a simple inquiry on the subject has been made in the case of Dublin, and the facts which have been brought to light reveal such startling contrasts between the death rates of the several social classes as to make it obviously desirable to discover whether the phenomenon repeats itself in the case of English towns. Already some facts bearing on the question are forthcoming, and these tend to show, in regard to England, "sufficiently wide contrasts between the rates of mortality among the professional and independent and the working classes to supply material for the gravest consideration of politicians, as well as sanitary reformers." Concerning the distribution of diseases, the Dublin inquiry is replete with results which appear almost anomalous on the surface, sometimes showing that the poor enjoy a greater immunity than the rich. Thus it was found that diphtheria was only slightly prevalent among the laboring classes; the artisans had more of it, and the professional class still more, while the middle class suffered most, and also had the highest death rate from enteric fever. This particular experience is not confined to Dublin, but has also been noticed at Glasgow, and the only available explanation is one which says little for the value of some of our modern sanitary works. On the whole, the Dublin statistics indicate that the poor are the principal sufferers from zymotic disease, notwithstanding the remarkable exceptions just mentioned. The zymotic death rate was found to be three times as great among the general service class—that is to say, the mass of the working population—as among those engaged in professional pursuits. The mortality from measles was nearly ten times as great in the general service class as in the professional and independent class, and from whooping-cough more than four times as great. It is worthy of note that the death-rate from phthisis during the period of observation was 70 per cent. more in Dublin than in London, and was more than four times as fatal among the general service class as among persons of professional standing. Mortality from lung disease followed a similar law, though in a somewhat less degree.

The investigations of Dr. Ogle show that the mortality of males between the ages of 25 and 65, occupied as agricultural laborers, gardeners and nurserymen, is not much greater than that of clergymen. It is even considerably less than that of barristers and solicitors, or of medical practitioners. Thus poverty and hardship appear to play a very subordinate part in shortening human life, and classes far removed from each other in the matter of social status enjoy equal vitality. On the whole, there is a marked difference between the death-rate of the upper and lower classes, yet there are instructive exceptions to the rule. That which kills is not mere poverty or hard work; there must be the accompaniment of dirty homes, impure air, and more especially intemperance, to render life precarious. Neither will the possession of ample means and apparently healthy surroundings give all the security that might be expected, if judged by the fact that barristers and solicitors die earlier than the poor cottagers of the rural districts. Still, these professional classes make their appearance among those who have the lower death rates. The truth remains that, on the whole, the poor die first. The untoward influence of poverty appears in the large towns. Laborers may be healthy in the country, but in London they have a high mortality. Work in the open air is not sufficient to counteract adverse influences of another sort, as shown by the high death rate of those engaged in the cab and omnibus service. These die twice as fast as the gardener and agricultural laborer. Still more severe is the mortality among costermongers, hawkers and street sellers. Curiously enough, the mortality among hotel servants is nearly four times as great as that of the clerical class. Hotel service seems to be more fatal to human life than the occupation of the Cornish miner. One of the apparent anomalies connected with the rates of mortality is the high and increasing death-rate among medical men. This has been recently made the subject of a special and interesting paper by Dr. Ogle. It certainly calls for remark, and indeed for regret, that while the mortality of the population is on the decline, those who are more directly concerned in curing disease and preserving life, are themselves the peculiar victims of that fate which they are instrumental in averting from others.

In estimating the relative mortality of different classes in the community, regard has to be paid to

the proportion of children. This varies greatly in the different parts of the social scale. Thus Dr. Grimshaw found that a thousand of the professional and independent classes included only seventy-five children under five years of age, while a thousand of the artisan class contained one hundred and twenty-one such children. The Dublin statistics further prove that the annual mortality among children under five years of age is five times as great among the working population as in the professional and independent classes. Further on in life the balance keeps in the same direction, though in a less degree. Special attention is drawn to the enormous waste of infant life among the working population. It is a striking fact that this "wholesale slaughter of the sickly and weakly children under five years of age" does not verify the favorite theory of many vital statisticians, that those who survive are capable of living long. That the children of the poor need not die so young is proved by the statistics of the Peabody Buildings, situated in various parts of London, and housing some twenty thousand persons belonging to the artisan and laboring classs. The low rate of child mortality in that instance shows that one cause of early death is to be found in the character of the dwellings, though to this must be added the habits of the people themselves. The Peabody population is assuredly living in a higher scale of civilization than the mass of the London poor, so far as personal conduct is concerned. There is abundant scope for the saving of child life among the poor, it is however a painful thought that the lives thus spared may help to swell that enormous mass of indigence which hangs already as a burden on the state. The solving of the sanitary problem will leave other problems to be faced, and will rather add to the complexity of some of these.

THOMAS F. ROCHESTER, M.D., one of the most eminent members of the profession in the western part of New York, died at his home in Buffalo, May 24, 1887. He was born in Rochester, N. Y., in 1823. He graduated in medicine in 1848, and in 1853 accepted a professorship in the Medical Department of the University of Buffalo, and removed to that city, where he soon won a high reputation as a practitioner and teacher of medicine, and sustained it until his death.

DR. MORELL MACKENZIE AND THE CROWN PRINCE OF GERMANY.—For several days reports have reached this country of the serious illness of Prince Frederick William, who is suffering with a serious affection of the throat. A dispatch of May 30 says that Virchow determined by a microscopical examination that the growth is not carcinomatous. Dr. Morrell Mackenzie was called to Berlin to see the Prince, and it is said that his early arrival averted a thyrotomy. He removed about two-thirds of the growth. Dr. Mackenzie will go to Germany again in a few days. His call to Germany to see the Crown Prince is a merited honor, and shows that scientific worth is not estimated by geographical boundaries.

NEW YORK STATE MEDICAL ASSOCIATION—*Third District Branch.*—This Branch of the State Association will hold its next meeting in Odd-Fellows Hall, Elmira, N. Y., Thursday, June 16, 1887, commencing at 10 A.M. The programme embraces a large number of interesting papers, with a banquet in the evening.

DR. EDMOND FELIX ALFRED VULPIAN, widely known as the Dean of the Faculty of the French Academy of Medicine, died in Paris, May 18, 1887, aged 60 years.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Regular Meeting, March 23, 1887.

THE VICE-PRESIDENT, D. S. LAMB, M.D., IN THE CHAIR.

DR. J. B. HAMILTON gave the history and presented a specimen of

CANCER OF THE STOMACH AND PANCREAS.

The patient was a lady, 69 years of age, who first came under observation about three months ago, suffering from an injury to the hip joint. He found evidences of an old contusion, but there was general debility and anorexia. On palpation, there was found a perceptible tumor in the left hypochondriac region, which seemed to be enlargement of the spleen. There was some pain, a little jaundice, but no vomiting. The patient was not seen again for about a month, when the jaundice had deepened, the pain had become more constant, there was complete anorexia, the patient had become greatly emaciated, and the tumor was projecting in the left hypochondrium. The symptoms intensified until last evening, when the patient died. There was considerable vomiting in the last two or three days of her life, and for the last twenty-four hours, there was characteristic black vomit, previous to which time it had not been positively demonstrated that the stomach was involved. The specimen showed carcinoma of the pancreas, and a large cancerous mass occupying the posterior wall of the stomach involv-

ing the inner coats. The mesenteric glands in the vicinity were infiltrated, and the stomach was adherent to the abdominal parieties. He had been surprised to see so much disease of the stomach, with such negative symptoms, and accounted for the absence of vomiting by the fact that the pylorus was not involved, and the passage consequently unobstructed. The spleen was greatly atrophied.

In reply to a question by Dr. McArdle, he said there had been some diarrhœa at intervals, and within the last three or four days, but it had not been a prominent symptom.

Dr. S. C. Busey said that the absence of vomiting was probably accounted for as Dr. Hamilton says. The absence of pain, however, which is not uncommon in cancer of the stomach alone, is very unusual when both stomach and pancreas are involved.

Dr. Samuel S. Adams read a paper on

CIRCUMCISION FOR THE CURE OF ENURESIS.

He said that several years ago he had advocated circumcision for the cure of incontinence of urine only under certain conditions in a small class of patients. Further experience had convinced him that the views then held should be modified in order to broaden the scope of the operation. After the eighteenth month a healthy child should pass urine voluntarily; passing it involuntarily he deemed due to pathological cause and not to carelessness. Instead of accepting the popular belief that incontinence is due to laziness, he had been able to detect a specific pathological state in all his cases. Boys have been repeatedly and unmercifully punished for bedwetting when they were powerless to control the sphincter on account of disease. Again, others let the disease run on, hoping that education and refinement will effect a cure, or expect it to be relieved by the establishment of puberty. In too many cases the disease is not treated, and finally psychical changes take place. The boy's whole disposition is altered, and he presents a striking likeness of the onanist.

The disease is divided into three classes: In the first there is a constant dribbling of urine day and night. This is infrequent, and is associated with some serious pathological state; consequently it does not fall within the scope of this paper. In the second class, the incontinence is intermittent in character and occurs in the day as well as at night.

The urine is retained for a short time when the desire to void it comes, but before the child reaches a convenient place the sphincter relaxes and the child soils his clothes. But our interest is in the third class, because of its frequency, its nocturnal character, its possible concealment for years, and the promptness with which it yields to treatment.

It is the children of this class who are so frequently punished for bedwetting when they are as powerless to control the sphincter during the night as those of the two preceeding classes during the day. Dr. Adams thought he could safely add another class, although it might be claimed that it properly belonged to vesical hyperæsthesia. In these the urine is only held for a short time when there is an incontrollable desire to void it. Clinical observation warranted him in making such a classification. This position is strengthened by the fact, that the treatment applicable to this form is similar to that in the others and is equally as successful.

Formerly he did not advocate circumcision in all cases of elongated prepuce, because he believed that if the adhesions were broken up, thus rendering the prepuce capable of retraction, the incontinence would be cured. He had learned by more extended clinical experience that there are a great number of cases that will not be cured as long as the redundant prepuce remains. In a large majority of cases destruction of the adhesions will only afford temporary relief. Where phymosis exist there seems to be no question about the surgical procedure. It is in those with the retractible prepuce that the propriety of circumcision is called in question. In children under 8 years physicians operate without hesitancy; after this age there is a tendency to delay operative measures until the child's health is impaired.

Dr. Adams then gave the clinical histories of the classes and described the methods of treatment that had been applied, and finally abandoned. The disease becomes so bad and the person so filthy, that the child is brought to the surgeon. He finds the prepuce projecting from one-fourth to one-half inch beyond the meatus; the opening is small and its margin is irritated; and on retracting it he finds an ichorous, foul-smelling collection behind the corona, and the glands irritated and injected.

The nerve-supply of the penis is derived from the pudic nerve, giving branches to the musculi-bulbo and ischio cavernosa, and then passing to the glans where it breaks up in sensory filaments. A portion of these final branches possess a special kind of end-bulb, discovered by Kraus, and called genital corpuscles. It also receives branches from the hypogastric plexus. The upper part of the bladder receives its supply from the hypogastric plexus and the base and neck from the fourth sacral nerve.

It seems reasonable that an irritation of the terminal filaments of the pudic and hypogastric distributed on and around the glans penis, being of sufficient intensity to overcome their spinal gangliomi termination, will also expend its force on the centre of urination and the bladder will be emptied. If the prepuce covers the glans in the adult, the greatest care has to be taken to secure cleanliness and prevent inflammation. The natural secretions soon become offensive and irritating, causing a vesicular inflammation of the corona and adjacent mucous membrane, which is characterized by intense itching, burning, foul odor, painful erections and frequent micturition. This condition is seldom seen in those who have the glans uncovered. Such conditions must occur frequently in the child, that even by the strictest supervision will not regard the hygiene of its person. In only one instance had he known enuresis to continue after circumcision. This child he had previously treated for gonorrhœa so that the continuance of the incontinence might be due to stricture; however, this was only presumptive as the boy would not permit another examination.

DR. T. C. SMITH said that according to his experience the majority of cases of incontinence of urine had been in females, and he would like to ask Dr. Adams what he would do in such cases?

DR. G. L. MAGRUDER stated that he had been interested in the subject for several years, and was glad to hear Dr. Adams express himself so positively in favor of this operation. He is in accord with what he has said, and even goes further and believes in the operation as a means of relieving constant dribbling.

His service at the Central Dispensary has confirmed the opinion he expressed so early as 1879, when he first advocated circumcision for the relief of this class of troubles. In his experience enuresis is cured at once by circumcision if the parts heal by first intention; if not and there is some inflammation, the trouble may continue until it subsides. His experience as to the relative frequency in the sexes does not coincide with Dr. Smith's. At the Central Dispensary the proportion is about ten boys to one girl with incontinence. He often finds, however, a vulvitis, a vaginitis, or a constriction about the clitoris, which last he breaks down by passing a probe around the organ. He also finds that females respond to medicinal treatment more readily than do the males.

In this connection he has found strychnia the most valuable drug, with belladonna next, and where there is a bad state of health, syrup of the iodide of iron. He is not an enthusiast about this last, in all cases, but in females he considers it especially valuable.

DR. T. C. SMITH said that he has never had a large experience with circumcision for enuresis, but he considers it a valuable operation, and one that is not often enough done. If some dynamic force could be found which would compel the whole male population to allow their penis to be examined by some doctor, what a variety of pathological conditions we should find. The other day a man came to his office with a picture of his own penis and asked him what could be done with such an organ. Dr. Smith persuaded the patient to let him see the original of the picture, when he found a pin hole prepuce with a portion of the glans penis sticking through it like a polypus. Years ago he had treated this man for asthma, and after months of treatment he was no better. The patient went from one to another doctor without being benefited of his asthma. Dr. Smith said that he was positive that if he had known of the condition of the prepuce when he first attended the case for asthma, he could have cured his patient by circumcision. This man was married and his wife had given birth to a puny child which had died in about six weeks. The asthma still continues, but he does not expect to cure it by circumcision which he has recommended.

DR. J. FORD THOMPSON rarely stops to study up the reflexes when called to see a child with a long prepuce. It is his invariable custom to recommend circumcision when he finds a long or adherent prepuce. It is, however, remarkable how some men escape all trouble with this affection. The other day he operated upon a man of 80 who had never seen his glans penis. The man had been married forty years and had a large family of children. He never had had the slightest trouble with his penis and only came to consult a doctor because of a slight inflammation around the meatus, which bothered him on micturition. He has also had two similar cases in men over 70. In one of these cases cocaine was used; the patient suffered no pain whatever and continued telling a story which he had begun before the operation. He has been called upon to operate for incontinence less frequently than for other conditions, but he can recollect but one case of incontinence that was not relieved by the operation Many circumcisions, are however, done so early that one cannot say what might have happened without the operation. It is the rule to look at the penis in every case of chronic disease, and he is often astonished to see the number of children that require the operation. He has circumcised in apparent cases of bone and hip disease with relief to the child, and he has recently found several cases of club-foot and hare-lip which have needed the operation. Some time ago he operated for Dr. Busey, on a child with epilepsy, who had been treated unsuccessfully by some of the best doctors in another city. The result was a perfect cure. Dilating the prepuce or simply breaking down the adhesions is of little or no value. The only satisfactory way to do is to slit the prepuce back to the sulcus, and to cut off enough to keep the glans uncovered. He has operated on adults who have been virtually impotent on account of a long tight foreskin. A man of 35 once told him that though he had been with women a great deal, he had never completed the act of copulation, because when he got an erection of the penis the irritation of the tight prepuce forced the organism before he reached the woman. Dr. Thompson found an adherent prepuce and a swollen glans, and expressed the conviction that circumcision would make him a new man. The operation was done, and in six months the patient came back again, saying that he could now enjoy himself as other men, and bringing tangible evidence that he had at all events made the effort.

He saw a child with the late Dr. Newman that had been treated for hip disease. A careful examination of the hip showed that there was no disease in that region, but upon examining the penis a long and adherent prepuce was found. Dr. T. concluded that therein lay the trouble, but this opinion was not coincided in by Dr. Newman. Circumcision was, however, performed and in six months the child was well. Of course, a tight prepuce is not the cause of hip-disease, but the symptoms produced by it sometimes simulate hip or spinal trouble. His opinion is, that it is the duty of every doctor to examine the penis of every new-born male child, and where there is a long adherent prepuce to operate even before the nervous symptoms begin. Even retained smegma may cause all the symptoms of a tight foreskin, but this cannot occur if the prepuce is removed.

DR. T. E. MACARDLE agrees with Dr. Adams when he reccommends circumcision without wasting

time in attempting a cure with drugs. He also agrees with Dr. Magruder that medicinal treatment is more efficacious on females with incontinence than on males. Belladonna he has found the most useful drug in these cases. In the female ascarides or filth may be the cause of the enuresis, and the removal of the cause will often effect a cure without medication.

Dr. S. C. Busey remarked that what has been said with regard to the effects of a long prepuce, is true in many cases; he coincides to a great extent with the opinions expressed. There are, however, many cases cured without resorting to circumcision. Vesical irritation, for instance, is a not infrequent cause of incontinence, but may be cured by drugs. One remedy will not cure all cases, but the one which he has found most useful has been belladonna. In his practice the proportion has not been so high as ten boys to one girl, troubled with incontinence. While circumcision is an operation always necessary when it causes retention of urine, it does not always cure incontinence. He would like to know whether Jewish children are much troubled with incontinence of urine. If circumcision has such a good effect, the custom among the Jews of circumcision on the eighth day must make enuresis a rare disease with that race. The boy referred to had been a masturbator and an epileptic, but since the operation, ten months ago, he has had no return of the convulsions. He has also seen children with epileptiform convulsions occurring every three or four weeks, cured by circumcision, while Dr. Sayre has well demonstrated that some very peculiar nervous symptoms have been improved or cured by the operation. Idiocy has not, however, been completely cured by circumcision. There must be other causes besides a tight prepuce for the trouble occurs so frequently in females, even where there is no local irritation. As has been said, medicine acts better upon this sex than males. The medication need not be addressed directly to the local trouble, but to any constitutional cachexia that may be present, and for this purpose nothing is better than the syrup of the iodide of iron. The cause must always be sought out and whether local or not, hygiene, food and dress must be considered in the treatment.

In conclusion, he would say, that whilst he considered circumcision a valuable operation from a hygienic point of view, and would advise it in all cases of long prepuce, yet he believes that many cases of incontinence can be cured without resorting to it at all.

Dr. G. L. Magruder agrees with Dr. Thompson as to the advisability of examining the genitals of male children. In reply to Dr. T.'s remark that he had never seen a statement that a tight prepuce was the cause of hip-disease, would call attention to the observation of Dr. Barwell, who investigated this subject, and in 100 cases of hip-trouble examined, only six had a normal foreskin. Barwell has divided this condition of the penis into five degrees. The first degree, in which there is only a pin-hole opening in the prepuce, and so on down to the fifth degree, in which the organ is normal.

He also requested a friend to find the number of hip joint cases in a hospital frequented by Jews, and the friend replied, "that there were no Jewish patients with hip-disease." It seems, therefore, that there is some connection between a tight prepuce and hip-joint trouble. There is a nerve which leads from the sacral plexus into the hip joint. Barwell thinks that the influence of irritation at the glans penis can readily modify the trophic changes that take place in the hip at this time of life. On the other hand, Sayre asserts that the hip trouble is from falling down, an accident that children with tight foreskins are especially liable to owing to the weakening of the muscles produced by the condition of the genitals. Since his connection with the Central Dispensary he has seen many cases of club foot, but only two of them have been in girls. A few weeks ago he saw a child of three months who had never had a comfortable night's rest since its birth, and who had grown peevish and emaciated. The trouble was constant priapism. Two homœopaths had been pouring cocaine into the urethra in hopes that that would bring relief, but without effect. Upon examination, he found the prepuce attached over the whole of the glans, and a quantity of smegma collected behind it. He broke down the adhesions, and finding further a short frenum it was cut. The child was almost instantly relieved and has been progressing favorably ever since.

Dr. Samuel S. Adams, in closing said, that he had limited his paper to circumcision where there was an elongated prepuce, and he consequently had not encroached upon Dr. Magruder's paper, which took in a broader field. He is glad to see that Dr. Thompson has come to believe in circumcision for general symptoms. Dr. Adams, continuing, said that he had always advocated circumcision in elongated prepuce, and that this paper was a reiteration of his belief expressed when Dr. Magruder read the paper which had been alluded to.

AMERICAN SURGICAL ASSOCIATION.

Eighth Annual Session held in the Army Medical Museum, Washington, D. C., May 11, 12, 13 and 14, 1887.

Tuesday, May 12—Second Day.

Afternoon Session.

(*Concluded from page 609.*)

Dr. R. A. Kinloch, of Charleston, S. C., read a paper on

PISTOL-SHOT WOUND OF THE ABDOMEN TREATED BY LAPAROTOMY AND SUTURING THE INTESTINES.

J. B., colored, aged 27, was admitted into the City Hospital, January 21. He had been shot two hours before in the abdomen with a pistol ball. The ball entered 1½ inches to the left of the umbilicus. There was slight shock. At 10 P.M. ½ grain of morphia was given hypodermically, and shortly afterwards anæsthesia was induced. Penetration of the peritoneum was first determined, and the abdomen was

then opened by median incision. The intestines were examined piece by piece and wrapped in towels wrung out of a 1–10,000 bichloride of mercury solution. The jejunum presented four wounds. The ileum had two wounds. The mesentery was perforated in two places, and was also badly torn. There was free bleeding from a mesenteric branch, which was controlled by silk ligature. All the wounds were closed with the Lembert suture, using a fine round needle and antiseptic silk. The wounds of the mesentery were brought together as far as was possible, but there was an infiltration of blood which could not be removed. The abdominal cavity was washed out with a weak solution of hydrarg. bichloride, the abdominal wound was closed with silver sutures, and a large rubber drainage tube introduced. Antiseptic precautions were observed throughout the operation. The next morning vomiting occurred, and an examination of the wound showed that a suture had given way and a knuckle of intestine protruded. This was returned and the opening closed. At 5 P.M. the temperature was 102°. Vomiting again occurred, and shortly after midnight the patient expired suddenly.

Autopsy.—No adhesion of the parietal peritoneum had occurred. Half a pint of dark sero-sanguinolent fluid was found in the cavity. All the intestinal sutures had held and there was no fæcal extravasation. A circumscribed abscess was discovered in the meso-colon out of the line of the bullet. The ball was found behind the body of the fourth lumbar vertebræ on the left side.

This was the third case in which the author had performed laparotomy for bullet wounds of the abdomen without visceral protrusion. In two cases of such injury the patients recovered without operation. The first operation was performed May 27, 1883. This patient recovered. This was the first time that laparotomy was done for gunshot wound without protrusion.

DR. W. W. KEEN, of Philadelphia, reported a case of

PISTOL-SHOT WOUND OF THE ABDOMEN, INVOLVING THE LIVER, STOMACH, SUPERIOR MESENTERIC VEIN, INTESTINE AND KIDNEY; LAPAROTOMY; NEPHRECTOMY; DEATH ON THE FIFTEENTH DAY.

A girl of nearly 18 shot herself with a pistol, calibre No. 32, at 6:30 A.M., April 1, 1887. The ball had entered over the liver, and was found lying under the skin of the left flank. I saw her at 2 P.M. The wound of entrance was over the ninth rib, which was fractured, 4½ inches above the level of the navel, and 3¾ inches to the right of the median line. Skin not burned. The ball was located 8 inches to the left of the median line and 1½ inches above the level of the navel. There was moderate tenderness over the entire belly, hepatic dulness not changed, stomach resonant from fifth interspace, no cough, no râles, vocal fremitus normal. Renal dulness began at tenth rib on left side and was the same on the two sides. There was severe pain in the left shoulder. She had vomited 1½ drachm of clear bright blood, she told me, immediately after the accident. About a pint of urine, the first since the accident, was drawn by the catheter. It was not bloody. Pulse 104; respiration 30; no material rise of temperature. As after consultation it was deemed almost certain that the belly was invaded by the ball, exploratory laparotomy was advised, consented to, and begun at 3 P.M., and lasted nearly three hours, with every antiseptic precaution. The ball was easily removed just under the skin. Neither wound could be traced positively into the belly. On opening the belly neither blood nor serum escaped, nor was any extravasated food or fæces noticed. There was no peritonitis. Two fingers were passed in, and an effort made to discover the wound of entrance or exit, without any being revealed by touch. The wound was then enlarged and the stomach drawn out. A small round wound near the pylorus was found and was closed by four sutures (Lembert) of the finest iron dyed silk, a round ordinary sewing needle being used. This wound was practically closed by the pouting mucous membrane. As the ball had entered the stomach, search was made for the necessary wound of exit. None was to be found, but the manipulation showed that a small amount of bloody serum existed in the belly, and a large area of extravasation was seen in the mesentery. But little blood had escaped into the peritoneal cavity. The mesentery was carefully torn through and a small artery tied. The chief bleeding came from a hole nearly ⅛ inch in diameter in a large vein, so large and lax that at first I thought it the vena cava, but its position just below the head of the pancreas convinced me that it was a large superior mesenteric vein just before it forms the portal vein. After much difficulty I seized it with hæmostatic forceps, and placed a lateral ligature of chromicized catgut on it.

The anterior border of the liver had been scalloped by the ball, but as there was no bleeding, it was let alone. In addition, a large wound in a coil of small intestine in the left flank had been found. Ten Lembert sutures were used in closing it. Returning now to the stomach, a very careful search was again made for the wound of exit. It was found obscured by a slight coating of blood. This was closed by three black silk Lembert sutures. A systematic investigation of the entire bowel from the stomach to the sigmoid flexure showed no other wounds. The left kidney was badly lacerated, and was immediately removed by peeling it out of its capsule and tying the pedicle with a stout silk ligature. A rubber drainage-tube was inserted through the wound of exit into the abdominal cavity. The wound of entrance was cleansed and closed by three stitches, and the wound of exit by two. Sublimate gauze, rubber dam, and a wide flannel bandage completed the dressing.

On the 8th she had a chill lasting twelve minutes, and the temperature rose to 104°, but as the most careful examination revealed no spot of special tenderness, no dulness, no fluctuation, and she was almost, it seemed, *in articulo mortis*, it was not deemed prudent to reopen the belly.

On the 10th she improved somewhat. On the 13th she had another chill with a temperature of 105.4°,

had vomited several times, and also had some involuntary evacuations. But as her condition was fair, pulse 136, temp. 101.4°, the belly was reopened and explored. The intestines were bright and glistening and no peritonitis existed. Surgical bimanual examination revealed no pus or special tenderness at the site of the removed kidney, or, so far as it could be located, at the intestinal wound. No shock followed. The next day (fourteenth) she had two bloody motions and gradually failed, dying on the fifteenth day.

The autopsy revealed general peritonitis, but no free pus was found anywhere. Only one wound was found in the stomach, near the pylorus, and this was healed, the four stitches being seen in place. The blood in the mesentery was disintegrating and suppurating, though no abscess existed, nor was there any free pus in the peritoneal cavity. The suppuration was chiefly marked along the mesenteric attachment of the intestine. On the other side of the mesentery, corresponding in position to this wound, was a spot in the bowel wall as large as a five-cent coin, which was gangrenous, and in its centre were two perforations of the bowel. No wound was found except that discovered at the operation. No trouble was found at the site of the removed kidney. Although it was nearly ten hours from the accident to the time when the intestines and stomach were sutured, no intestinal or gastric juice or fluid escaped, though the intestinal wound was so large and vomiting occurred three times.

The kidney, I believe, has never before been removed at a laparotomy for gunshot wound, but it was clearly the right thing to do. The day following the operation the remaining kidney worked badly, only 3½ ounces of albuminous urine being secreted. But the next two days dispelled all anxiety on this score, the urine rising to 24 and 40 ounces respectively, and the albumen soon disappeared. The early and marked compensatory enlargement of the right kidney is also of great interest and importance, though, of course, now well known to follow nephrectomy.

Dr. P. S. Conner, of Cincinnati, remarked that the most important point to determine is, when should the abdominal cavity be opened? If there is extravasation of bile, fæces or urine through the wound, the nature of the injury is clear, but in the absence of these signs there is much doubt. There is no single symptom or collection of symptoms to be relied upon. He had been disposed to attach some value to the presence of profound depression of temperature. If the temperature remains subnormal four, five or six hours, penetration and perforation may be considered almost certain. Diagnostial laparotomy is admirable in certain cases. In private practice we have to be largely governed by the opinions of the patient and his friends. Most of these cases necessarily involve legal investigation, and it is a very simple matter to show that death resulted not from the original injury but from the surgeon's knife. While he considered it wise to lay down the general rule that penetrating wounds of the abdomen, and still more perforating wounds of the viscera, should be submitted to laparotomy, at the same time he held that we are not justified in laying this down as a hard and fast rule.

Dr. Moses Gunn, of Chicago: When Dr. Sims proposed this operation a few years ago the profession were not ready to accept it. All are now prepared to say that it is a proper measure to pursue, but the only question is how to make the diagnosis? We have, as has been said, no positive signs of visceral injury. He thought that we are fully warranted in saying that we may resort to laparotomy for purposes of diagnosis when we are in doubt.

Dr. T. G. Richardson, of New Orleans, stated that the statistics of the Charity Hospital of New Orleans showed that in the last five years there had been thirty-one cases of penetrating knife wounds of the abdomen, of which twenty-four recovered and seven died. There were thirty-three cases of gunshot wounds of the abdomen, with thirteen recoveries and twenty deaths. These cases were treated on the expectant plan.

Dr. D. Hayes Agnew, of Philadelphia, had very strong convictions in regard to laparotomy. He believed that where there is a reasonable degree of evidence that there is a penetrating wound of the abdominal wall, especially if a shot wound, it is the surgeon's duty to make an exploratory incision. We are not to be deterred by the possibility of some legal technicality if the case should come into court. We are to do our duty without reference to the consequences.

Drs. David Prince, Joseph Ransohoff and N. P. Dandridge also reported cases bearing upon this discussion.

Dr. J. Edwin Michael, of Baltimore, read a report of a case of

VENTRAL HERNIA SUCCESSFULLY TREATED BY OPERATION, WITH A SUGGESTION AS TO THE METHOD OF OPERATING.

Mrs. F., stout woman, 45 years of age, had a ventral hernia resulting from a fall several years previously. Great annoyance was experienced in the use of pads and bandages. The patient insisted on operation, and March 15, 1886, the operation was performed. Antiseptic precautions were adopted. Free incision was made in the median line. The sac was carefully separated from surrounding tissues. It was then emptied of its contents and opened. The sac was cut off close to the margin of the ring. Strong silver wire sutures were passed a little less than one half an inch apart, having a hold of one-half to three-fourths inch. The sutures included the peritoneal, muscular and tendinous structures only. These were twisted and perforated shot employed. The wire was then cut off close. The wound united rapidly. In October, examination of the wound showed it to be firmly united. The sutures could be felt, but gave no inconvenience. In his remarks the speaker stated that his object in using the wire sutures in this manner was the expectation that they would be surrounded by a mass of cicatricial tissue, making a permanent closure of the ring. As far as he was aware, he had used the wire for this purpose without precedent.

A paper on *Prognosis in Sarcomata of the Breast*, by S. W. Gross, of Philadelphia, was read by title.

DR. D. HAYES AGNEW, of Philadelphia, read a paper on

THE MEDICO-LEGAL ASPECT OF CRANIAL AND THORACIC WOUNDS (SUICIDAL).

The study of this subject had been suggested to him by a recent case occurring in Newport, Rhode Island. The question was as to the possibility of a cranial wound and a wound of the heart being self-inflicted. A colored man was found one morning lying dead under the breakfast-table. He had food in his mouth, and had a wound of the head and of the heart. The coroner's jury returned a verdict of suicide and the body was buried. Subsequently it was disinterred and the verdict reconsidered, and the conclusion reached that the man had been murdered. Suspicion then fell upon the son-in-law of the man, who had up to this time borne a good reputation. At the trial five medical experts were called for the prosecution, and their general testimony was that these wounds were incompatible with the idea of suicide. Subsequently the prisoner confessed that he had committed the murder. As this was an important question, the author had investigated it. Injury to the brain is not necessarily followed by loss of consciousness or by paralysis. Many cases were cited to show the truth of this statement. Numerous instances of heart injury were given in which, after the reception of the accident, the individual was able to perform many acts. Cases were also given in which persons, in attempting suicide, had produced injuries of the head and of the heart. As the result of his study the speaker concluded that it is possible for a ball to enter the brain without destroying consciousness, although for a moment it may cause mental confusion, and that a suicide may shoot himself in the head and after a moment shoot himself in the heart.

In the discussion which followed numerous cases were related in which the heart or brain had been injured and the individual had lived for some time, and had not been unconscious. Cases were also given in which both a wound of the heart and of the brain had undoubtedly been produced by the individual himself.

FRIDAY, MAY 13.—THIRD DAY.

MORNING SESSION.

The following were elected

OFFICERS FOR THE ENSUING YEAR.

President—Dr. D. Hayes Agnew, of Philadelphia.

Vice-Presidents—Dr. N. Senn, of Milwaukee, and Dr. F. S. Dennis, of New York.

Secretary—Dr. Jacob R. Weist, of Richmond, Ind.

Treasurer—Dr. Phineas S. Conner, of Cincinnati.

Recorder—Dr. J. Ewing Mears, of Philadelphia.

Council—Drs. J. S. Billings, L. McLane Tiffany, Moses Gunn, and R. A. Kinloch.

Chairman of Committee of Arrangements—Dr. John S. Billings, of Washington.

The following were elected

NEW MEMBERS.

Charles B. Porter, M.D., of Boston; William M. Mastin, M.D., Mobile, Ala.; and Morris H. Richardson, M.D., Boston, Mass.

The next meeting to be held at the call of the President.

DR. L. MCLANE TIFFANY, of Baltimore, read a paper on

SURGICAL DISEASES OF THE WHITE AND COLORED RACES COMPARED.

The paper was based on the record of 4930 cases, studied during a period of thirty-four months in a general hospital. The percentages of the affections were given in detail. The paper was simply intended as a preliminary communication, and as a result of a study of the figures obtained the following suggestions were made:

1. Surgical affections follow different courses in the white and colored races, under identical hygienic surroundings.

2. Surgical injuries and operations are better borne by negroes than by whites.

3. Surgical diseases involving the lymphatic system, especially tubercular, are more fatal and more rapidly fatal in negroes than in whites.

4. Congenital deformities are rarer in negroes than in whites.

5. The surgical differences observed in whites and negroes are due to racial peculiarities.

DR. CHRISTOPHER JOHNSTON, of Baltimore, said that his experience indicates that there are individual as well as racial peculiarities. These are most striking in proportion to the pureness of the blood. He regarded the negro as a good subject for surgical operation. He had never seen carbuncle in negro. He does not recall a cleft palate or hare lip in the darker individuals. Epithelioma is infrequent. Fibromas are quite frequent. He had found that in the negro the skin and white tissues are more frequently the seat of certain diseases than the same tissues in the white.

DR. T. H. RICHARDSON, of New Orleans, presented a detailed report of the statistics of the Charity Hospital, bearing upon this point. He had found congenital deformities rarely in the negro.

DR. E. H. GREGORY, of St. Louis, had seen keloid much more frequently in negro than in white, and had never seen multiple keloid in the white race. The ability of negroes to stand operation may be due to his indifference, and he does not comprehend the magnitude of the operation.

DR. W. T. BRIGGS, of Nashville, said that his experience confirmed the suggestions of Dr. Tiffany. Negroes are very prone to suppuration. It is extremely difficult to prevent suppuration even under strict antiseptic precaution. Negroes bear operations better than whites, but they do not get well so rapidly. While malformations are less frequent, still they do occur. The rarity of hydrocele in the hospital records may be explained by the fact that negroes do not usually seek advice until the tumor has become so large as to give rise to much inconvenience. Ovarian tumor is rare, although he had had one case.

DR. D. W. YANDELL, of Louisville, Ky., had seen

many cases of keloid in the negro, but had not seen a case in the white subject. He had seen but two cases of hydrocele in the negro, and never saw hare lip in the negro. He had seen but two ovarian tumors in the negroes, and never saw epithelioma of the face of a negro. Epilepsy is exceedingly rare in the negro. Tetanus is exceedingly common, especially in the blacker race. Stricture of urethra is exceedingly common among negroes.

Dr. R. A. Kinloch thought that in the pure negro suppuration is less likely to occur than in the white race. As a rule the pure negro is not strumous. Mulattos are, as a rule, strumous. The pure negro bears operation well and recovers promptly.

Dr. A. Vanderveer, during the past twenty years, had seen a great many negroes, United States prisoners, sent to the Albany penitentiary. The vast majority of these die of tuberculosis of some form. Many of them have soft chancre with suppurative buboes. Where there is true Hunterian chancre there has been the characteristic bullet bubo seen in the white race. There are a greater number of perineal abscesses and sinuses than in the white. If operation is done there is less probability of urethral fever.

Dr. B. A. Watson, of Jersey City, read

AN EXPERIMENTAL STUDY OF THE EFFECTS OF PUNCTURE OF THE HEART IN CASES OF CHLOROFORM NARCOSIS.

The results of sixty experiments on dogs were given in detail. The experiment consisted briefly in producing death by chlororform inhalation, and then within from one to three or four minutes an aspirating needle was introduced into the heart through the chest walls, the attempt being to reach the right ventricle. In the first fifty cases the chloroform was administered rapidly and air was excluded as far as was possible. In the last ten the chloroform was administered slowly, and with a large proportion of air. The first forty animals had already suffered some severe traumatic injury, while the last twenty were perfectly healthy animals. The punctures made in these 60 experiments were as follows: Right ventricle 38; left ventricle, 6; right auricle, 6; superior vena cava, 3; inferior vena cava, 2; apex of the heart, 2; and not stated, 1. The resuscitations were as follows: after puncture of the right ventricle, 9; right auricle, 1. The first forty experiments gave only four recoveries, while the last twenty gave six. In only one of the sixty cases did the heart fail to respond to puncture, and in this instance the use of the needle was postponed for four minutes after the cessation of the heart's action, and one minute after breathing had stopped.

Should the puncture be carried into one of the the cavities of the heart in order that blood may be abstracted? In chloroform narcosis the heart is found in diastole and the veins in the lungs are greatly distended with blood. It may therefore theoretically be assumed that blood may be advantageously drawn from the right side of the heart. The author was assured that this procedure was practical and advantageous.

The only deaths during these experiments which could be attributed directly to the puncture, were those in which the needle penetrated the vena cava. In these cases there was profuse hæmorrhage into the thoracic cavity. Punctures made into the auricle are sometimes followed by a flow of blood into the pericardium. Punctures into the ventricle are not attended with any hæmorrhage from the interior of the organ, but there may be a few drops of blood from a wounded cardiac vein.

The following conclusions were reached:

First, Puncture of the heart, especially of the right ventricle, stimulates muscular contractions, and may be advantageously applied in the treatment of chloroform narcosis.

Secondly, The best results are obtained when abstraction of blood from the cavity of the ventricle is combined with the stimulating effects produced by the entrance of the aspiratory needle.

Thirdly, The puncture of the right ventricle is a safer and more efficient operative procedure than the puncture of the right ventricle.

Dr. N. P. Dandridge, of Cincinnati, said: The conditions under which the experiments were made were different from those under which accidents usually occur in human beings. In the latter case, the accident usually occurs after only a small quantity has been taken and often early in its administration. The effect is probably due to a reflex effect upon the inhibitory action of the heart. In the experiments reported puncture was resorted to within one or two minutes after the cessation of the heart's action. In the accidents with chloroform, it is not uncommon to have recovery after apparent cessation of the heart's action for a comparatively longer period. A large number of experiments are required to test the relative value of this procedure as compared with artificial respiration. The use of nitrite of amyl, and particularly with the subcutaneous injection of atropia. This latter can always be done quickly, and has a stimulating effect upon the cardiac and respiratory centres.

Dr. John B. Roberts, of Philadelphia, said that the speaker, while he had shown the comparative inocuousness of the heart with a small needle, had also shown the danger of using chloroform as an anæsthetic in any cases, possibly cases of parturition excepted. His experiments have shown that it is more dangerous to puncture the auricle than the ventricle, which would naturally be suggested by the fact that the auricle has a much thinner wall.

Dr. T. J. Dunott, of Harrisburg, referred to a case in which the heart was twice punctured with an aspiratory needle, and blood drawn from the cavity of the heart. It was a case of dilatation of the heart with general dropsy, etc. The operation was performed by a homeopathic practitioner, under the idea that he was dealing with a case of dropsy of the pericardium. A large quantity of blood was removed, and for a time there was improvement. The symptoms again returned and the operation was repeated with a fatal result.

The committee to which was referred the *Suggestion's contained in the President's Address*, reported

that in view of the satisfactory manner in which the work of the present meeting had been prepared, it saw no reason for a change and did not recommend the appointment of a business committee. It recommended the adoption of the second suggestion with reference to the abrogation of Article 9 of the Constitution. The committee was in accord with the President, but as the article had been introduced at the express desire of the first President of the Association, it was then recommended that it be allowed to remain. The committee recommended the adoption of the suggestion that applications for membership lay over for one year.

AFTERNOON SESSION.

DR. T. J. DUNOTT, of Harrisburg, read a paper on

HYPERTROPHY OF THE TONGUE, OTHERWISE KNOWN AS LINGUA VITULI, LINGUA PROPENDULÆ AND MACROGLOSSIA.

This affection of the tongue, though rare, is mentioned by nearly all surgeons of large experience. The case described by the speaker was that of a girl, 12 years of age, admitted to the Harrisburg Hospital January 6, 1886. The tongue protruded from the mouth a distance of three and five-eighths inches. The lips were greatly distended, and the angles of the mouth not far removed from the external opening of the auditory canal. The greatest width of the tongue was four and three-fourths inches, and the greatest circumference nine and three-fourths inches. The prolapse of the tongue was only of two months' duration, and had begun without apparent cause. The measurements taken one week after admission showed a decided increase in the size of the tongue. The tongue was removed on February 19. After providing against hæmorrhage the organ was removed with scalpel and scissors, the section being so made as to secure a conical stump. All the dense fibro mass was taken away, the weight of the removed portion being over ten ounces. By January 31, the stump was entirely healed. There was no difficulty in keeping the mouth closed. When heard from March 23, she could eat and drink without difficulty and was gaining flesh rapidly. The paper was concluded with an account of the various operations which had been practiced for the removal of the tongue.

DR. L. MCLANE TIFFANY gave the history of a case. A negro girl, 5 years of age, had suffered with hypertrophy of the tongue dating from birth. Ever since the first few months of life, the child had been unable to cover the tongue with its lips. The tongue was removed with the Paquelin cautery. Within a week the patient was eating potatoes and meat, and left the hospital ten days after operation. At this time there was a healthy granulating surface.

DR. J. FORD THOMPSON, of Washington, reported

TWO CASES OF VAGINAL HYSTERECTOMY.

Case 1.—Mrs. A. E., aged 45 years, white, was seen in April, 1885, suffering with malignant disease of the uterus. There was great destruction of the cervix, the ulceration extending above the internal os. On consultation, it was decided to avoid hysterectomy if possible, but to limit the operation to amputation of the cervix with scraping, etc. During the operation the peritoneal cavity was opened. It was then decided to extirpate the uterus. The womb was separated from the bladder in front. A ligature was then placed around each broad ligament and tied. The uterus was then split in two. Each half was then brought down, the broad ligaments tied above the temporary ligatures, and the uterus removed. After thorough cleansing the vagina was tightly packed with iodoform gauze. At the end of the operation the patient was very weak, and notwithstanding all efforts died in the course of twenty-four hours.

Case 2.—Mrs. H. white, aged 55 years, came under observation with cancer of the cervix, in January, 1887. The posterior lip of the cervix was almost entirely destroyed, and the disease had encroached upon the posterior cul-de-sac. The cervical canal was involved at least as high as the internal os. The operation was performed February, 21, 1887, antiseptic precautions being adopted throughout. The dissection was begun at the posterior part, and carried around the cervix. A silk ligature was passed with a long curved needle through the lateral vaginal vault of either side and tied. The inclosed portion was then cut from the uterus. These ligatures presumably enclosed the uterine arteries and the lower part of the broad ligament. The uterus was then separated from the bladder in front, and a loop of silk was attached to the peritoneum. The posterior cul de-sac was treated in the same way. The uterus was then tilted through the opening, and the broad ligaments transfixed and tied. There was no loss of blood. The peritoneal flaps were then brought together with two catgut sutures and a drainage tube introduced into each angle of the wound. The vagina was packed with iodoform gauze. The patient recovered without any unpleasant symptoms.

DR. T. F. PREWITT, of St. Louis, agreed with the author that extirpation of the uterus is a justifiable operation. He was almost prepared to go further, and say that on the earliest appearance of epithelioma of the cervix the whole organ should be extirpated. He believed that ultimately this will be the course adopted.

DR. E. H. GREGORY said that it was one of the rules of old surgery to save every part possible, and he would no more think of removing the whole lip for limited epithelioma of that part.

DR. R. A. KINLOCH said that in the uterus we have an organ suspended in the pelvis and easily isolated. Now if statistics show that by cutting far and wide without jeopardizing life too much, we can cut short the disease, we are carrying out the rules of old surgery when we do so.

DR. T. G. RICHARDSON reported a case of

ANEURISM OF THE LEFT SUBCLAVIAN ARTERY FOR THE CURE OF WHICH THREE METHODS OF TREATMENT WERE EMPLOYED—DEATH.

The patient, a healthy muscular Irish laborer,

came under observation October 19, 1885. Aneurism of the left subclavian artery was diagnosed. The patient had suffered with syphilis and constitutional measures were first tried. Iodide of potassium in fifteen or twenty grain doses, was given three times a day. At the end of a week no perceptible effect being observed it was discontinued. Direct pressure was next tried, an elastic band with a compress over the vessel was secured to a belt around the waist This was continued a month, and although it slightly retarded the growth of the swelling, it had had no decided result. The third method, the introduction of surgical pins was next resorted to, nineteen of these measuring an inch and a half in length, were passed through the anterior wall of the tumor at different places. The aneurism was still growing rapidly, and all the pins that could be reached were withdrawn. Some of them had disappeared on account of the swelling which had taken place. An attempt was then made to ligate the axillary artery, but in spite of the utmost care the lower portion of the aneurism was ruptured in the progress of the operation. The wound was at once packed with lint dipped in Monsel's solution. The hæmorrhage having been stopped, half a drachm of a 5 per cent. solution of bichloride of iron was injected into the centre of the tumor. At the end of twenty-four hours no coagulation having taken place, a second injection of twice the strength was employed. The next morning there was a exhausting hæmorrhage, ending fatally in a few hours.

Dr. Richardson also reported a case of

FEMORAL ANEURISM CURED BY ELEVATION AND FLEXION OF THE LIMB.

The patient, an Italian, aged 55 years, was admitted to the hospital Dec. 11, 1886, with a large aneurism of the femoral artery four inches below the femoral arch. While the case was being studied the limb was flexed at a right angle at the hip and knee and suspended on a Smith's anterior splint. The next day the pulsation was greatly reduced and the patient was quite comfortable. The treatment was continued and at the end of the third day the tumor was solid. The limb was kept in this position for ten days or two weeks. The patient was discharged cured one week later. The speaker called attention to the fact that there was no direct pressure upon the tumor and that the result was due entirely to flexion and suspension of the limb.

Dr. James McCann, of Pittsburg, reported a case of

SPLENECTOMY.

The paper was a case in which removal of the spleen had been practiced with recovery of the patient.

A paper entitled *The Study of the Methods of Operation Practiced and the Results Obtained in the treatment of Cleft of the hard and soft Palates, illustrated by the record of Fifty Cases*, by Dr. Ewing Mears, of Philadelphia, was read by title.

A vote of thanks was then extended to the Surgeon-General for the use of the room; to the Cosmos Club for courtesies extended, and to the officers of the Association for the efficient manner in which the proceedings had been conducted.

The association then adjourned to meet at the call of the President.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, April 7, 1887.

The President, Thomas M. Drysdale, M.D., in the Chair.

D. B. C. Hirst read a paper on

THE ETIOLOGY AND TREATMENT OF CASES OF SO-CALLED LATE INFECTION IN THE PUERPERAL STATE.

The title of this paper is, I fear, too pretentious: Its object is merely the brief relation of four cases of so called late infection in the puerperal state, all, I believe, due to the same cause, all yielding to the same treatment and conveying therefore a lesson of some little interest and value.

The first case was young primapara delivered without difficulty after a moderately long labor. She left her bed on the eleventh day, having had no fever and having manifested no unusual symptom: Two days afterward her cervix was exposed to view by means of a bivalve speculum and a slight laceration was discovered, healing by granulation. The following morning, the fourteenth day after delivery, the patient was unwell, her temperature was 102°, large doses of quinine were given, but the temperature rose to 103° where it remained with slight morning remission for two days: A more careful examination being made, it was discovered that the uterus was unusually large, that the os was patulous, that there was a foul smelling discharge and considerable abdominal tenderness. The history of the case with these symptoms pointed to the retention of membranes, possibly a portion of the placenta and their subsequent decomposition originated by the admission of air to the vagina and uterus by the use of the speculum. Acting on this diagnosis, the uterine cavity was lightly scraped out with a dull curette and a large quantity of decomposing decidua removed This was followed by an intra-uterine injection of bi-chloride of mercury through a Bozeman's double catheter. The woman's temperature at the time was 103°. The following morning it had sunk to 99°, and within 24 hours was normal, and so remained.

The second case was also a primapara: The labor was terminated by the forceps. Upon the eleventh day the woman, although perfectly well until that time, had a morning temperature of 101° rising in the evening to 102°. The uterus was found larger than it should have been. The os was patulous and there was a fetid discharge. Profiting by the experience gained in the first case the uterus was curetted and a considerable amount of decidua removed, and a intra-uterine douche given. In this case the womb almost at once contracted and the discharge ceased; but the patient had, unfortunately, an exacerbation of a tubercular trouble in one lung which kept the temperature high for some days.

In the third case, also a primapara, after an instrumental labor and an apparently normal lying-in, the temperature rose on the twelfth day to 99.8° and on the following to 100°, at the same time a fetid mucopurulent discharge made its appearance. In this case a very large quantity of decidual membrane was removed and the scraping was repeated on the following day, whereupon the temperature fell to normal and the discharge ceased.

The fourth case was a primapara, who on the sixth day, after an easy labor, had a temperature of 100° although previously there had been no fever; the uterus here was very large, the os quite patulous, but in this case there was not much discharge. The same treatment was employed that had proved successful in the other cases, with the result of reducing the temperature within twenty-four hours to normal, where it remained.

Now this experience is entirely too limited to enable one to come to a definite conclusion as to the cause of late infection in the puerperal state, but these cases suggested to my mind the possibility at least that the retentive and subsequent decomposition of shreds of membrane or fragments of placenta will be found to be the most frequent cause of fever late in the puerperal state, and that if not interfered with this condition may lead to septicæmia and pyæmia. Other causes of fever late in the puerperal state are of course well known. Partially healed wounds of the cervix, vagina and perineum may be torn apart and the fresh wounds thus produced may give entrance to the germs of septicæmia. Exposure to an atmosphere impregnated with emanations from sewers or water-closets from bad sanitation may give rise to febrile diseases at any time during the puerperium as proved in the cases related by Dr. Playfair in a recent English journal. There is a possibility that the pyogenic micro-organisms which may carry on their work in the uterine cavity without very serious consequences to the patient, may in the tubes manufacture their product, pus, in such quantities that it cannot be drained off, thus producing an abscess that may possibly open into the peritoneal cavity. There is a still more remote possibility that a pyo-salpinx may be developed late in the puerperium by other pathogenic micro organisms, by those of gonorrhœa, of tuberculosis, or even those of actinomycosis. Finally any of the febrile diseases that may attack a woman at any time may fasten themselves upon her during the lying in period, but, as I have already said, it seems to me that the most common cause of late infection in the puerperal state is the decomposition of retained membrane or fragments of placenta, and that therefore the curette and the intra-uterine douche might be employed as a routine treatment in all cases where there occurs late in the puerperium, fever associated with a large uterus, a patulous os and a foul smelling discharge. This treatment can do no harm but may effect much good. My own experience in this direction is, however, limited, and upon this point I would like to have the opinion of the Society, whose experience collectively and individually must be greater than my own.

(To be continued.)

FOREIGN CORRESPONDENCE

LETTER FROM LONDON.[1]

Charing Cross Hospital—King's College Hospital—Sir Joseph Lister—The Spray—Sir James Paget—St. Bartholomew's Hospital—Ovariotomy—Antisepsis—Tarsotomy as it should not be done—Museum of the College of Surgeons—Professor Stewart.

Dear Dr. Fenger:—My hospital visits in London began with Charing Cross Hospital. This institution is centrally located and was built in 1837. It contains nearly 200 beds, and affords a fair opportunity for studying accidental surgery, as the majority of cases treated here are recent injuries. Bloxam, Bellamy and Barwell are the surgeons in attendance. Although the spray is still in use and antiseptic dressings are applied, I found many of the wounds suppurating; the best possible proof that the essential and pedantic details of modern treatment of wounds are not fully carried out in practice. Carbolic acid is used as an antiseptic. Frequent changes of dressing undoubtedly are responsible, in many instances, for the numerous failures in securing primary union of wounds. As in most English hospitals, the mechanical treatment of injuries and after resections consists in the use of complicated and ingenious splints which, in the hands of their inventors, answer an admirable purpose in securing rest for the parts and comfort to the patient. Almost every hospital surgeon has immortalized himself by the invention of some kind of a splint, and never tires in pointing out its advantages and the indications for its use. Every London hospital has its own medical school. The building for the school of this hospital is quite small, smaller than any of the college buildings in Chicago, and the material used for illustrating the lectures is entirely inadequate. The class which expects to become proficient in the healing art in this temple of Æsculapius numbers about 200. For a foreigner to visit such a school in the proud city of London it must become evident that science indeed travels westward, when he compares its lecture-rooms with those of the medical colleges in Chicago.

With such reflections I left this hospital and turned my way towards King's College Hospital, where I was to meet the father of antiseptic surgery. I was full of anticipations of what I should see and learn at the feet of the man whose teachings had revolutionized the practice of surgery throughout the entire civilized world. How great my disappointment! A walk through the wards of Sir Joseph Lister soon convinced me that prosperity and honors, even if well deserved, only too often exert an injurious effect upon the scientific career of distinguished professional men. Sir Joseph Lister of to-day is only the shadow of Mr. Joseph Lister of 1876. The dressings which I was shown only corroborate this statement. The only thing that was new to me in the way of dressing wounds was the colored gauze, which is used to distinguish it from gauze not rendered aseptic. Great importance is placed upon the disappear-

[1] By permission of Drs. Fenger and Senn.

ance of color on the surface of the gauze, as an indication that the secretions from the wound have reached the surface, an occurrence which is looked upon as a necessity for a change of dressing. A number of lumbar abscesses were shown which had been simply incised and drained, and where the whole dressing was composed of a very thin and small compress of gauze and a layer of absorbent cotton still smaller than the gauze compress. The tension suture, which has been in general use for more than ten years, was shown and explained as though the hearers had never seen or heard of such a thing.

The German command, *Fort mit dem Spray!* has been obeyed here. The antiseptic solution in use is a combination of corrosive sublimate and muriate of ammonia, which is preferred to the simple solution of sublimate. I am firmly convinced of the fact that had Mr. Lister remained as such in Edinburgh, the scene of his former active life, his scientific existence would not have terminated so abruptly, and many additional discoveries and improvements would have been inscribed upon his tablet of fame. Although his scientific career ended with his change of residence to London, Sir Joseph Lister must be considered as the greatest of living surgeons. The seed that he has sown has brought fruit which has been the means of saving thousands of lives. The principles of antiseptic surgery as taught by him have found the most fertile soil in Germany, where the treatment of wounds has been simplified and improved to such a degree of perfection that primary union is the rule, and the dreaded complications, septicæmia and pyæmia, are almost unknown. Indeed, it must be a great source of satisfaction for Sir Joseph Lister to know that the method of practice he promulgated so strenuously for nearly a decade has been perfected by the most prominent surgeons on the Continent, and that through it the principles and practice of surgery have undergone a complete revolution. It is not my intention to abstract from the greatness of Lister, but I cannot but deplore that for nearly ten years he has been but little else than a spectator in the arena of the surgical world.

Among the most pleasant and profitable hours spent in London I must include a visit to Sir James Paget. Around the breakfast-table we discussed for nearly two hours matters pertaining to surgical interests on both Continents. Any one who has had the pleasure of a personal acquaintance with this gentleman will not wonder any longer why he has by universal consent been the leader among medical men, not only in his own country, but almost the entire world, for nearly half a century. It would be difficult to find a man possessed of so many admirable qualities in the same degree which fit him for such position. A ripe scholar, a clear writer, a model teacher, a successful surgeon, an eloquent speaker, a perfect gentleman, are happy combinations but seldom found in the same person.

He resigned his hospital positions twelve years ago, and is now devoting his whole time to consultation practice and scientific studies. He is inclined to the belief that antiseptic surgery will eventually mean surgical cleanliness. Although advanced in years, his interest in the welfare of his profession reuains unabated and his habits of industry unchanged. He not only reads the literature pertaining to surgery from every possible source, but is likewise perfectly familiar with the recent advancements in the collateral sciences. Through his kindness I found ready entrance into the museums, hospitals and educational institutions of London.

At St. Bartholomew's Hospital I witnessed an ovariotomy by Mr. Langton. This hospital contains about 600 beds, and is connected with a medical school attended by about 350 students. The operation was performed in Martha ward, on the fourth floor, where a small amphitheatre, with room for about twenty spectators, has been built. The room is heated by an open grate fire, and the temperature was not over 70° F. The spray is used during the operation. The patient was 70 years of age and the tumor had been growing for three years. Examination revealed a large cyst in the abdomen, and a number of hard nodules in connection with the cyst could be felt in the pelvis. About fifteen students were present. The usual antiseptic precautions were observed during the operation. The abdomen was opened by an incision through the linea alba about four inches in length, and the cyst tapped with the large trocar of Spencer Wells. The puncture was followed by a free escape of fluid along the sides of the trocar, and some of it entered the abdominal cavity, and the wound was freely irrigated with the cyst contents. Sponges were used to remove the extravasated fluid, and as the cyst collapsed it was drawn out of the wound, an act which was readily accomplished, as no adhesions were found.

It has always seemed to me that the use of a large trocar with a truncated cutting edge in tapping a tense cyst is attended invariably by extravasation of fluid, and consequently increases the risk of peritonitis. When the cyst contents are fluid, the patient should either be placed upon her side during the tapping, and proper precautions adopted to prevent entrance of fluid into the abdominal cavity, or the cyst should be emptied sufficiently to bring it into the wound by the use of a small trocar or by aspiration. In case the contents are colloid they will escape through no tube, and incision of the cyst with the patient upon her side. and traction upon the cyst wall so as to keep it in uninterrupted accurate contact with the abdominal wall, are the only measures which will accomplish the desired object with safety. The pedicle was transfixed with a long-handled needle armed with a double ligature, tied on both sides, cut short and dropped. The peritoneal cavity was sponged out and the abdominal wound closed in the customary manner. The external wound was dusted with iodoform and a typical Lister dressing applied. The dressing proper was fastened upon the abdomen with broad strips of adhesive plaster; over this a cotton compress was applied, retained with a broad flannel bandage. The lower extremities of the patient were covered with a flannel blanket, but no external heat applied. Hæmorrhage, wherever it was discovered, was carefully arrested with hæmostatic forceps and

catgut ligatures. In this hospital all cases of ovariotomy are turned over to Mr. Langton for operation.

In Mr. Savory's wards in this hospital, I was informed by the house surgeon, Mr. Burd, no pretension is made to practise antiseptic surgery, and the resident staff allude with pride to the fact that during the last eleven months only one case of pyæmia occurred, and that the majority of wounds heal without suppuration. Thorough cleanliness in the ordinary sense of the word is enforced, and the wounds are protected with an oiled strip of cloth or covered with a moist compress.

In the operating theatre I found one of the attending surgeons, whose name I do not care to mention, ready to perform tarsotomy in a case of aggravated clubfoot. An incision was made in each side of the tarsus, and after many difficulties and perplexities, a tunnel was made underneath the tendons from one incision to the other, and a chain saw passed through with a probe. Now the difficult task commenced of sawing in the right direction. Two assistants attempted to obey the directions of the operator, but the chain failed to take the proper direction. Disgusted with the performance, the operator took his turn, but utterly failed to correct the insane inclinations of that beastly but determined chain to deviate from the erroneous path. After sawing in multiple directions, the bystanders were assured that one of the incisions of the V had been made, and the chain was slipped towards the ankle-joint and was again set in motion, and after the exertion of a good deal of muscular force, which brought the sweat upon the brows of all immediately concerned in the transaction, it was concluded that the V was made. By this time the operator had become very nervous, and with the forceps made a plunge for the superfluous piece of bone; and after numerous attempts he succeeded in removing a number of fragments.

When an attempt was made to straighten the foot, the disgusted operator convinced himself that more bone must be removed. Instead of using a fine straight saw, or the more modern chisel, he persisted in the use of that rebellious instrument that had already caused so much trouble and anxiety—the chain saw. After another free use of this abominable instrument a few more fragments were removed, and forcible attempt made to bring the foot in proper position. As this could not be accomplished, it was decided that the tendo Achilles was at fault, and this offending structure was handed over to the liberal use of the tenotome. Another forcible attempt to straighten the foot converted the subcutaneous tract into an open wound, and as all the resources had been exhausted by this time, a typical Lister dressing was applied. When Esmarch's constrictor was removed the dressings soon became saturated with crimson blood, which called for more antiseptic material and firmer compression. The surgeon, at this stage of proceedings, was covered with perspiration, and only revived after the patient was carried into the ward and out of sight. I am unable to say what became of the case, but if foot and life were preserved, it is safe to predict that another operation will be required in the future, or London's army of paupers will receive an additional increase.

Nearly a whole day I spent in the Museum of the College of Surgeons, under the kind guidance of Professor Stewart, a distinguished scholar and scientist. By stipulation a number of lectures must be delivered in this institution annually. The present course is given by Prof. Stewart, "On the Comparative Anatomy of the Internal Ear." I had an opportunity to examine the specimens used for illustrating these lectures, and it is safe to claim that no second collection of this kind could be found. A large and valuable library is accessible to all of the members of the college. The Museum contains John Hunter's collection. With this enormous collection as a nucleus, and the liberal donations which have been made by the Fellows and members since its foundation, this museum outranks anything of its kind in the amount of material it contains and the way in which it is classified. The specimens are so arranged that any subject in anatomy, physiology and pathology can be looked up and studied in a remarkably short time with the aid of a complete index, which can be found in its proper place in each section. Almost every subject is illustrated by botanical specimens and specimens of animals, from the lowest to the highest form. Under the head of monstrosities I examined a specimen of a fœtus in fœtu. The fœtus was found in the pelvis of a boy 15 years of age, who died of accidental causes. The fœtus is perfect in every respect, and is surrounded by a thick and dense cyst. The indefatigable energy and great genius of the illustrious founder of this wonderful collection become apparent by the many labels which are marked with his name. N. SENN.

DOMESTIC CORRESPONDENCE

ALBUMINURIA WITHOUT ALBUMIN.

Dear Sir :—I desire to present the following case to the readers of THE JOURNAL, making no attempt to explain their apparently wondrous features. The tests and observations, as well as the records, were made with all possible care and particularity.

Mrs. M., aged 51, American, mother of one child 20 years of age. She presents no special diathesis, but for several years has had a debilitated, and somewhat emaciated appearance resulting chiefly from overwork and a disturbed climacteric. In May, 1886, and during my absence from the city, Mrs. M., from exposure to cold and damp, was attacked with chills and some febrile action, for which my friend, Dr. D. was called to prescribe. Upon my return, about two weeks subsequent to her attack, I found her able to sit up, but presenting the typical pallor of countenance, with puffiness below the eyes characteristic of albuminuria. Dizziness was also complained of, and loss of appetite, with emaciation. The pulse was small, feeble and rapid. The feet, ankles, and legs, nearly to the knees, were tensely œdematous, pitting upon pressure, with the usual glistening of the distended

surface. Inquiry failed to prove any special variation in the color or quantity of the urine at any time since her attack. A specimen was obtained at my first visit, which upon standing threw down a turbid, milky deposit of considerable quantity; color (above sediment) light straw, sp. gr. 1020, heat with and without nitric acid, and nitric acid alone, failed upon repeated trial, to show the presence in any quantity, of albumin.

The microscope more than compensated for this negative chemical testimony by producing sufficient evidence in support of the diagnosis of nephritis. The specimen was marked by the absence of crystals, the field crowded with fat globules and tube casts. The casts were mostly large and roughly fractured; and some contained red blood. Subsequently, up to this date, no less than fifteen careful tests for albumin have been made, and at intervals varying from one week to a month, in some of which I have been assisted by Dr. S. G. Wilson, of this city, the result being uniform in the failure to find albumin. As this report refers only to one, but the most important, characteristic of this condition, the details of treatment are omitted.

The remarkable fact, that we may have albuminuria without albuminous urine receives support in the experience of my friend Dr. Wilson, who has a patient with much anasarca, indeed, water-logged, and whose urine, while loaded with tube casts, resists all attempts to display a trace of albumin, a fact seriously misleading, and actually defeating efforts to arrive at a satisfactory diagnosis or treatment until the tube casts disclosed the situation.

Very truly yours,

H. C. MARKHAM, M.D.

Independence, Iowa, May, 1887.

MISSTATEMENTS OF THE MEDICAL RECORD.

Dear Sir:—One might be led to believe, after reading the following item in the *New York Medical Record*, of May 14, that the editor of that journal is the advisory angel of the American Medical Association:

"The coming meeting of the American Medical Association at Chicago will not, we trust, be 'hippodromed' in the extraordinary and undignified way which characterized its session a year ago. It is not a question of codes, a climate or locality, but of self-respect, the dignity and conservatism which ought to characterize a great representative body of physicians."

It would be well if the editor of the *Record* would attend the meetings of the Association, and learn from personal observation how that body conducts itself, instead of issuing his annual diatribe a thousand miles away, and thus making himself ridiculous by his gross misrepresentations of the conduct of the meetings of the Association and of the large number of physicians who make up that body.

Very truly yours,

J. F. JENKINS, M.D.

Tecumseh, Mich., May 25, 1887.

BOOK REVIEWS.

THE PRINCIPLES AND PRACTICE OF OPERATIVE SURGERY. By STEPHEN SMITH, A.M., M.D., Professor of Clinical Surgery in the University of the City of New York, etc. New and thoroughly revised edition. Illustrated with 1005 woodcuts, 8vo., pp. xxxii—877. Philadelphia: Lea Brothers & Co. 1887. Chicago: A. C. McClurg & Co.

Since the publication of the germ of this work in 1879, there have been eight issues; but this book as it now appears is really the second, and only revised, edition. And one can form but little idea of the change made in the work without directly comparing the first issue with this last edition; the difference lies in the fact that the first edition was the exponent of the operative principles of the "old surgery," while this embodies the principles of the "new surgery."

The first chapter, on the "Civil Obligations of the Surgeon," may seem to be "matter out of place" in a work on operative surgery; but a moment's reflection will show that such is not the case, and it should be carefully read by every medical man. And certainly all must agree with him that "antisepsis imposes new obligations" upon the surgeon; in surgical cases he must apply antiseptic principles with reasonable care and diligence, or he may be justly held responsible for unfavorable results from conditions preventible by antisepsis.

It would be impossible to give an analysis of the book in the short space at our disposal; and, indeed, those familiar with surgical literature will not wish it. Dr. Smith's work does not need our commendation, and, except in a few particulars, it is beyond criticism. The treatment of stricture of the urethra is not mentioned, nor is the operation for shortening bones in extensive injuries to the soft parts.

INTERNATIONAL CONGRESS.

SECTION IN PSYCHOLOGICAL MEDICINE AND NERVOUS DISEASES.

It is proposed to give one of the Sessions of the Section in Psychological Medicine and Nervous Diseases, during the meeting of the Medical Congress, to a discussion on Syphilis and its relations to Insanity.

The discussion will be opened by Dr. George H. Savage, Senior Physician Bethlem Royal Hospital, London, England, and will embrace the following divisions:

1. Iodicy, imbecility, moral perversions due to inherited Syphilis.

2. Insanity associated with acute Syphilis, (*A*) Physical, (*B*) Moral.

3. Syphilis producing Epilepsy, with or without Insanity.

4. Syphilis producing Mental Weakness, (*A*) with, (*B*) without Paralysis.

5. Syphilis as associated with general paralysis of the insane.

6. Pathology, as represented by coarse changes like gummata, or slighter ones as seen in Arterial disease.

Several of our English confrères have already arranged to take part in the above.

Those who intend to engage in the discussion of one or more of the above "questions," should send notice to the Secretary. The time allowed for each paper in the discussion, is ten minutes. Tabular and bibliographical material can appear in the printed paper, but it is respectfully suggested that the matter prepared for reading be as illustrative and pointed as possible.

Clinical observations, post-mortem appearances and conclusions will be specially applicable.

Papers relating to Syphilis and Nervous Diseases will also be read during the same session.

E. D. FERGUSON, *Sec'y.*

Troy, New York.

ASSOCIATION ITEMS.

RAILWAY AND HOTEL RATES.

These rates have been fully published in THE JOURNAL for the past three weeks. The railways have agreed to return physicians attending the meeting, on presentation of a combined certificate and receipt, or simply a receipt from the railroad agent at starting-point, stating that *full* rate has been paid *going* to Chicago. Those who intend coming to the meeting should again read the letter of Dr. Montgomery in THE JOURNAL of May 21, page 586 before setting out.

Dr. Montgomery's instructions in brief are: He will furnish persons starting from points in Trunk Line territory—which is East of Niagara Falls, Buffalo, Salamanca, Pittsburg, Bellaire and Wheeling, with blank forms, known as the "Trunk Line Certificate," upon application to him for same. Persons from the places just named and points West thereof, will be required to use the certificates of the Central Traffic Association, which will be furnished by the ticket agent at starting point when ticket is bought. One or the other of these forms of certificate should be obtained when the ticket is bought for Chicago, as persons living East and South must have their certificates endorsed by the Chairman of the Transportation Committee.

Southern Visitors.—Dr. Montgomery will supply delegates and members of their families, with the "Southern Passenger Association" blank certificate; and such delegates (Southern), will use this certificate upon any of the 42 lines of railway South of the Ohio and Potomac rivers. As regards those living along Trunk Lines or in the Southern Passenger Association territory, Dr. Montgomery's certificates will be honored within territory West of termini of the various trunk lines of roads, as the places named above indicate, as well as to North of the Ohio river—known as the "Central Traffic Association territory."

Tickets for return journey are to be sold in Chicago at one-third the *Lowest Regular Limited Fare*, to those coming from the East or South upon presentation of certificates properly endorsed at the meeting.

In all, there are some ten or twelve members, we believe, that constitute the Committee on Transportation here, whose earnest endeavor it will be, to permit no delay in assisting our professional brethren in the matter of their acquiring full and complete information upon the above topics, at time of arrival, during the stay with us, or before the hour of departure for the return journey. Therefore, we venture a safe prediction in saying, that all who come will be cordially welcomed by this Committee, as well as by the entire profession of this Garden City.

Telegrams for blank certificates will be immediately answered.

MISCELLANEOUS.

MILK AS A MEDIUM OF INFECTION.—The spread of disease through the medium of milk has often been demonstrated, but seldom more strikingly than by an investigation lately pursued by the Massachusetts State Board of Health, for the purpose of discovering the cause of an outbreak of typhoid fever that occurred last autumn in a certain district in Cambridge. It was found that all the milk supplied to the district came from one farm in New Hampshire; that on the farm there was a well into which a privy vault drained, the water of the well being used to wash the milk cans; and, finally, that last summer a person lay sick with typhoid fever on the farm. The conclusion was unavoidable that the fever-germs were carried in the milk, and thus the disease disseminated among the people of Cambridge.—*New York Medical Journal*, March 10, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 21, 1887, TO MAY 27, 1887.

Major V. B. Hubbard, Surgeon, granted leave of absence for one month, to take effect on or about June 1, 1887. S. O. 119, A. G. O., May 24, 1887.

Capt. F. W. Elbrey, Asst. Surgeon, found incapacitated for active service by an Army Retiring Board; sick leave still further extended until further orders, on account of disability. S. O. 116, A. G. O., May 20, 1887.

Capt. H. G. Burton, Asst. Surgeon, granted two months' leave of absence, on surgeon's certificate of disability. S. O. 107, Div. Atlantic, May 25, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING MAY 28, 1887.

Deane, C. W., P. A. Surgeon, detached from "Dale," and to hospital, Mare Island.

Harvey, H. P., Surgeon, orders to "Iroquois," revoked, and wait orders.

Dickson, S. H., P. A. Surgeon, detached from Navy Yard, Washington, D. C., and to the "Dale."

Waggener, J. R., Surgeon, detached from the "Iroquois," and wait orders.

White, S. Stuart, Asst. Surgeon, ordered to receiving ship "St. Louis," Navy Yard, League Island.

Field, James G., M.D., of Gordonsville, Va., commissioned Asst. Surgeon in the Navy, May 23, 1887.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDED MAY 21, 1887.

Goldsborough. C. B., Surgeon, leave of absence extended to June 1, on account of sickness. May 18, 1887.

Guitéras, John, P. A. Surgeon, granted leave of absence for four days. May 21, 1887.

Armstrong, S. T., P. A. Surgeon, to remain in charge of Service at Memphis, Tenn., until further orders. May 21, 1887.

Bevan, S. C., P. A. Surgeon, leave of absence extended thirty days. May 19, 1887.

Carrington, P. M., Asst. Surgeon, ordered to U. S. Revenue Str. "Rush." May 18, 1887.

Norman, Seaton, Asst. Surgeon, to proceed to Marine Hospital, Baltimore, Md., for temporary duty. May 20, 1887.

Heath, F. C., Asst. Surgeon, granted leave of absence for thirty days. May 18, 1887.

Woodward, R. M., Asst. Surgeon, appointed an Asst. Surgeon May 20, 1887. Assigned to temporary duty at the Marine Hospital, Balttmore, Md. May 21, 1887.

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THE PRESIDENT'S ADDRESS.

CELL ANTAGONISM.

Delivered before the Thirty-Eighth Annual Meeting of the American Medical Association, June 7, 1887.

BY ELISHA H. GREGORY, M.D.,

OF ST. LOUIS, MO.

Obviously, force and matter "make up" the universe. Force implies antagonism, antagonism perpetuates motion. The living cell is the embodiment of nature. Cell antagonism is life. Multicellular organisms represent a community of vital unities. A model organism in equilibrium is health. Cell struggle is the gist of modern pathology. Every organ and every element are vulnerable. The strength of resistance in elements and organs, reinforced by the harmony and precision of coördination, and the vigor of counter-agencies, are the momentous questions.

In seeking for a comprehensive title for my address, I fell upon the two simple words "cell antagonism," which form the foundation of symptomatology and pathology, conjoined with cell changes, the basis of pathological anatomy, embracing at once the universe of life and all the possibilities of life; disease being but one of multitudinous phases of life.

Huxley has likened the body to an army. "Of this army, each cell is a soldier; an organ, a brigade; the central nervous system, headquarters and field telegraph; the alimentary and circulatory system, the comissariat. Losses are made good by recruits born in the camp, and the life of the individual is a campaign, conducted successfully for a number of years, but with certain defeat in the long run." A model organism assumes that every soldier is a stalwart; every organ, a body of stalwarts with corresponding machinery of coördination and precision, all alike concerted and vigorous to meet the myriads of counter forces, many of which are too cunning for our ken, but ever ready to take advantage of the least failure of our strength, to penetrate our vitals. This force of vital resistance forms the basis of therapeutics, this "vis mediatrix naturæ" will be always the indispensable auxiliary of the physician, without which ally abandonment of the art would be inevitable.

The morphologist distinguishes two classes of elements within the organism. One class represents the fixed cells, cells which occupy the fortifications within the inter-cellular substance; the other class provides for the formation of new tissue, and represents the standing army, sometimes called embryonal substance. Before Cohnheim, our knowledge of the mobile elements—the mobilized army—of the body, was nothing; now most of the literature relating to neoplasm is or has become obsolete. Now coagulable lymph is impossible without the white corpuscles. Organizable fluids have vanished. Through the ingenuity and industry of the great German pathologist a revolution has been worked in medical thought. The study of the mobile elements of the body—the relatively independent elements—promises much. We can almost see daybreak in pathology, a dawn before the coming light which is to illuminate some of the dark places of this most intricate subject. Already leucocytes substitute fibrin. The latter is the product of the former. Wherever there is localized impairment of nutrition referable to irritation, or defective maintenance of nutrition, the result of inherent weakness, there the leucocytes concentrate, feast on the devitalized structures, and thereby develop into a tissue replacing that which they have consumed. When the surgeon wishes to dispose of an adventitious structure—a cyst, for example, in the connective tissue, he lowers the vitality by over-stimulation—irritation, when he confidently expects the leucocytes to congregate and destroy the cyst, substituting a granulation tissue, which in time becomes scar tissue. Now an organizable fluid as the essential product of inflammation, cells playing a passive part, is a thing of the past. Now cell potency, cell subtlety, and cell antagonism constitute the pith and marrow of medical science. There was a period in the history of pathology when all the neoplasia sprang from the tissue cells; now the place and destiny of the cell tissue is fixed. When the tissue elements yet contain some undifferentiated protoplasm, proliferation is possible, otherwise not probable. The mobile cells constitute the mobilized army; the great coördinating centres assemble them at any moment, ready to antagonize hurtful agencies. Irritation always provokes a concentration of the white cells. Irritation means injury. It may be simple or specific. Either way it is a signal for moving the army in solid phalanx to confront noxious agencies, and the combat is hotly contested till victory or discomfiture.

Inflammation, the keystone of medical science, the standard process by which all other pathological conditions are measured, is only to be explained on the theory of cell antagonism; it is practically a struggle between irritant bodies and white blood-corpuscles.

Foreign bodies are invariably invaded by leucocytes, their swarming having for its object to repel or render inert the offending cause. Observations directed to the white cell have been followed by an inspiring increase in our knowledge of the vital properties of cells in general. The quality of spontaneous motion once accepted, the idea that the cell played a passive part quickly disappeared, and in its stead came the conception of autonomy, the fact that the cell nourished itself, is not nourished, that the cell specialized food for its own purposes, actually breaking up compounds and adapting the products to its own growth and development; strikingly illustrated by an independent form of government, for example, the government of the United States. A great statesman has said ours was a "government of the people, by the people and for the people." Cells live of themselves, by themselves and for the whole body. The cells make the central government. The coördinating machinery is formed by the cells, and the cells are in their turn centralized and harmonized by this power. The tissue elements are in direct continuity with the centre, but it is otherwise with the floating, wandering cells; yet their behavior gives evidence of their concern for the well being of the entire organism. Again, the free cells take into their substance the most refractory substances, digesting solid bodies; sponges and green plants yielding to their digestive and assimilative processes. Observations the most patient and trustworthy on the lower vegetables have demonstrated the fact that bacteria have been seen in the substance of amœboid cells; others have been seen pursuing bacteria, ultimately capturing and destroying them. Throughout the whole animal kingdom mesoderm cells use their ingestive power for destroying micro-organisms. Further, this property seems to be utilized for the removal of larval organs. Colorless corpuscles present the same appearances and have similar properties and the same mode of origin in the entire range of living beings. When the irritant or harmful agency is particularly obdurate, white cells exhibit a very strange habit of throwing out processes which unite with similar processes from neighboring cells, until a considerable mass of protoplasm is formed by their confluence, constituting a giant cell. Thus an army of giants may be improvised on occasions of extreme emergency; for example, when the tail and gills of the tadpole are to be swept off, this powerful division is ready for the Herculean task.

Apply these facts to the inflammatory process in mammals. Suppose a foreign body lodged, that moment leucocytes leave the blood-vessels and congregate for the purpose of opposing the intruder. In such diseases as tubercle, leprosy, etc., the giant cells appear, and in their centre—their substance—the specific bacillus is found. Koch found the bacillus anthracis and the bacillus of septicæmia in the mouse, enclosed by white blood cells. We say, with these observations before us, inflammation exhibits a new aspect; cells conquering cells as a process of normal physiology; simply the free cells, the white cells resisting injury, there being a provision not only for concentration, but for increasing their number and augmenting their strength, corresponding to the emergency. A recent authority, Mr. Sutton says: "If we summarize the story of inflammation as we read it zoologically, it should be likened to a battle. The leucocytes are the defending army; their roads and lines of communication, the blood-vessels. Every composite organism maintains a certain proportion of leucocytes as representing its standing army. When the body is invaded by bacilli, bacteria, micrococci, chemical or other irritants, information of the aggression is telegraphed by means of the vaso-motor nerves, and the leucocytes rush to the attack, reinforcements and recruits are quickly found to increase the standing army, sometimes twenty, thirty or forty times the normal standard. In the conflict cells die and often are eaten by their companions; frequently the slaughter is so great the tissues become burdened by the dead bodies of the soldiers in the form of pus, the activity of the cells being testified by the fact, that the protoplasm often contains bacilli, etc., in various stages of destruction. The dead cells, like the corpses of soldiers that fall in battle, later become hurtful to the organism they in their lifetime were anxious to protect from harm, for they are fertile sources of septicæmia and pyæmia, the pestilence and scourge so much dreaded by operative surgeons. The analogy may seem to some a little romantic, but it appears to be warranted by the facts."

Just here the question obtrudes, are the action which follows mechanical, chemical and thermal injuries, and the action caused by vital injuries alike inflammatory processes? In the one, that resulting from physical causes, the nutrient processes are not disturbed, simply increased. In the other, that resulting from vital causes, the cell processes are disturbed, thwarted and vitiated. It seems unfortunate that the action which succeeds to traumatism should be confounded with that which succeeds to specific germs. The nutrient changes come into vigorous play after an ordinary injury, altered in one particular only, viz: the presence of a palpable neoplasm, which substitutes the structures doomed by the injury. The addition of new material is invisible in ordinary nutrition, growth and maintenance for example, the substitution being atomic. When a structure is destroyed bodily, as in traumatism, the substitution is corpuscular, therefore palpable. It is certainly perplexing to assume, as does Sir James Paget, that a visible neoplasm is produced by inflammation, but its development is impossible till after the withdrawal of the inflammation. To get rid of confusion, though we do not emerge from error, is to make a step towards truth. The full effect of traumatism is immediate and complete; it cannot increase itself, therefore its effects are always limited and within the possibility of estimation, for the reason that cause and effect are in precise correspondence; besides antiseptics do not influence the changes in any particular. On the other hand, the most extensive and severe injuries of vascular parts, involving bone, joints, the great cavities, etc., are possible without producing inflammation, provided antiseptic precautions be taken. When such com-

plication ensues, it is a wound accident, not a wound incident, and the result of infection. There is no disturbing factor in the process incident to repair; no waste products. If pus is found, it is the result of the intrusion of some noxious agency, some contagion, some pestilence; in short, a specific cause.

If it be agreed to call the action inseparable from ordinary injury, physiological repair, the term inflammation is limited to the series of events referable to a vital agency, which until very recently has eluded detection. A specific agency determines a class of diseases as distinctive and definite as the living creatures studied in natural history. Cell antagonism after physical injury is simply a substitution, through the development of mobile cells, of the tissue which has been spoiled. The fixed elements multiply and develop in the expansion and perfection of the several structures of which they are components, but take no active part in the process of repair after injury. After the perfection of the body, the factors favoring proliferation and those which inhabit it must be in a state of balance. In functional hypertrophy, the balance is towards the side of proliferation. On the other hand, in non-functional hypertrophy, the problem is not so simple; the balance is disturbed towards proliferation by some mysterious agency. How strikingly different when the cell antagonism is with a vital injury; here cell mysteries clash. The bacteria enter into conflict with the mobile and fixed cells, but it is not possible to know how the conflict is carried on. Certainly a series of disturbances ensue in the normal metabolism of the elements. The functional, formative and nutritive activities, which are the expressions of cell life, must be altered; their vigor, perhaps, lessened; and their susceptibilities modified. Exceptionally their life is enfeebled or extinguished. The issue of a bacterial affection is either the death of the patient, or the destruction and elimination of the bacteria. It follows that this disturbance of cellular activities, is always at the bottom of morbid symptomatology; and observations have shown that disease of this kind, successfully withstood, leaves the elements in a peculiar insusceptible condition, insuring an immunity, almost or quite complete, against a fresh invasion of the same or kindred bacteria. This modified susceptibility was practically understood by Jenner. Pasteur, resuming and systematizing the great Englishman's work, successfully modified cell forces, rendering them harmless by cultivation, and sending them on the important mission of destroying the natural proneness to the deadly assaults of the uncultured cells. Whilst we may despair of ever understanding the essential nature of vitality, the study of the causes which regulate life, and their subordination to conditions which may be determined, has lead the way to the grandest achievements of recent times. Pasteur and Lister are the great apostles of modern practical thought.

Huxley has suggested that it may be possible to introduce into the economy a molecular mechanism which, like a cunningly contrived torpedo, shall find its way to some particular group of cells and cause an explosion among them, leaving the rest untouched. Pasteur's cell mechanisms exceed the conception of the great scientist, for they cunningly change the vital qualities of the elements without destroying them. May we not look forward for some great advance in therapeutics in the direction to which Pasteur's genius points, by the study of cell antagonism. Certainly vital subtilties may best cope with vital subtilties. Study of the conditions in which infective agents arise, by ascertaining the circumstances which limit or facilitate their diffusion, has already raised surgery to a proud preëminence. With therapeutics it is otherwise, as it is doubtful whether the new facts have yielded the slightest increase of power against the diseases of mankind. Let us not despair. Knowledge must come first, then wisdom brings its practical application. The study of cell possibilities, their readiness and energy in rendering inert noxious agencies, whether introduced from without or arising from within, exhibiting an antagonism at once potent and direct, rather tends to dampen one's therapeutic enthusiasm. The thoughtful student sees nothing abnormal in disease. To be sure there is a physiological emergency, but there is no disorder in the cell processes; rather the perfection of order. If a physical or chemical cause intensifies the cell changes, in other words, determines the physiological emergency, every cell movement is direct, purposive and efficient, ending only when the intruder is ejected, encysted or accommodated. On the other hand, if the offense be a vital one, a living cell, a microphite, the spectacle is that of one living creature preying upon another, a declaration of the first law of nature, not an enemy, but an intruder struggling for self preservation, simply a physiological fight for life. Can we hope an ideal tonic for cell antagonism, such as would innervate the cells on one side and enervate them on the other, the "Old Chestnut" "prevention is better than cure" is not yet worm-eaten.

Cell antagonism implies a struggle. The duration of the struggle is determined by the quality of the irritant and the strength and resources of the antagonists. Acute inflammation is a sharp and decisive action; chronic inflammation is slow and indefinite. There are two strikingly important chronic conditions, viz: the interstitial inflammation and the infective granulomata, interesting alike to the physician and the surgeon; both are alike disastrous, the one, interstitial inflammation, destroying by cicatrical contraction; the other, infective granulomata, by stopping at the fibro-blast stage, retrogression replacing development. The quality of infection and the failure to develop beyond the stage of granulative tissue is the exact condition as illustrated by tuberculosis, syphilis, lupus, etc., in contrast with which is fibrosis of the liver, cirrhosis, fibrosis of the kidney, Bright's disease, fibrosis of the brain, sclerosis, interstitial inflammation, destroying the tissue elements by strangulation, and infective granulomata by contamination.

Again, the two varieties of inflammation referred to declare that the quality of the irritant determines the effect of the inflammation, the interstitial variety being caused by physical agency, and the infective

by a vital one. Cells antagonize physical causes without losing any of their vital qualities. Not so when cells antagonize vital causes. When cells are pitted against cells they may be despoiled of their highest quality, as in the infection granulomata they have parted with formative activity. In short, the knowledge that pertains to the presence of a vital irritant, epitomizes all that has been taught of infective disorders. The symptomatology and pathology of this class of diseases is but the life history, the play of cell activities, metabolisms and catalysis of antagonizing organisms, as likewise the knowledge pertaining to the presence of a foreign body or physical irritant, is the knowledge in brief of fibrinoses in general of that entire class of disorders known as interstitial inflammations. A persistent irritant—injury—with its attendant concentration of leucocytes, their inevitable development and ultimate transformation, the history of the capsulation of a foreign body, whether it be animate or inanimate, is the history of cirrhosis of the liver, fibrosis of the lung, morbus Brightii, atrophy of the heart, atrophy of voluntary muscles in general, sclerosis of the brain and bones; in short, diffuse capsulation. Some disseminated irritant, say alcohol, determines a sclerosis of the liver, and how? Every particle of alcohol being a foreign particle, having its capsule, it follows that capsulation is as uniformly distributed as the cause. An artisan inhales fine particles of steel or other foreign material and fibrinosis of the lung is the consequence. The irritants of gout and rheumatism are lodged in the kidney, the interstitial tissue of the organ increases, and in the end strangulates the tubules and malpighian bodies, resulting in shrinking and total disorganization of the organ, constituting Bright's disease. Like changes occur in the heart; co-incident with the development of the interstitial fibrous tissue is atrophy of the muscular substance, substituting a fibrous induration for its normal structure. A similar change in the voluntary muscles occurs in the curious disease known as pseudo-hypertrophic paralysis, chiefly afflicting children. The connective tissue between the muscular fibres increases so much, that the muscles affected may exceed their normal size three times. Later, however, the new tissue shrinks, and the contractile material of the muscles is spoiled. The condition of sclerosis in bones corresponds to cirrhosis of the liver, and Bright's disease of the kidney. In the nerve centres the interstitial tissue—neuroglia—takes on the same chronic over-growth, strangling the nerve strands and cells, giving rise to the most singular and complicated nervous phenomena. The changes thus induced are recognized by the general term sclerosis. If it involves the fascicules of Burdack and the column of Goll, locomotor ataxia results; if the medulla, bulbar paralysis, etc.

We have purposely avoided reference to diathesis, as also to the precise neurological relationship of cells, not because we deny their influence, but because too little is definitely known. On the contrary, the behavior of cells relatively to irritants, is well understood. The presence of a foreign body is at once and directly resisted by the leucocytes; a zone of inflammation, its destruction, transportation or capsulation, even parasites which resist the death-dealing assaults of the leucocytes, are at last imprisoned in cases of fibrous tissue.

There yet remains for our consideration a mysterious possibility relating to cell life, of great practical moment, viz: that of entering upon a life of independence, separating from the central nervous system "headquarters," disregarding the "field telegraph," oblivious to the morning "drum-beat," and wholly ignoring the restraining and directing influence of environing structures. We have learned that however much irritation may affect the vital qualities of cells, their fidelity is always preserved, there being no sign of disaffection, the army ever intact, the fealty of the soldiers supreme. Physical causes—traumatism—may crush or impair the tissues, but the cells come to the rescue with all vigor and directness. The prolonged presence of bacteria may impair the forces of the cells, enfeeble and extinguish them, but as long as life lasts their efforts are in harmony with the purposes of the organism. Thus it appears that alienation is not possible through the agency of irritation, however intensified, modified or prolonged.

The question constantly obtrudes: is alienation possible to a mature element, to an element that has assimilated itself physiologically as well as anatomically, with the surrounding tissues; taking part in its functions; concurring and co operating in all the processes of the economy? This question seems to have confronted Cohnheim, when his ingenuity suggested the embryonal hypothesis, viz: that the tumor germ was congenital; that there were in the mature body embryonal elements and tissues not utilized in the elaboration of the normal structures—latent, embryonal rudiments; small embryonal cells so diminutive as to elude observation, inactive perhaps, till some exciting cause awakens activity. Is not an embryonic element in a mature organism an alien? Is it not already an independent element? Are not patches in the skin, pigmented moles, islands of cartilage in mature bone, congenital angioma, etc., independent structures, already tumor germs, congenital rudiments of tumors? Accept the hypothesis of the great German pathologist, and the problem of tumor etiology is almost solved; it remains only to find the exciting cause; the predisposition is inherited; irritation, simple or otherwise, may be nearly allied to the awakening impulse. The difficulty is to reconcile cell antagonism with the proposition, this doctrine includes: the idea that all discordant bodies are treated as intruders, either ingested, transported, or covered up. We can conceive the possibility of the existence of an inoffensive tissue or element, one that simply draws its nourishment from adjacent tissue, without any serious disturbance of their normal metabolism. We would gladly adopt the theory of Cohnheim, which ascribes the origin of tumor neoplasms to persistent germinal rudiment. Certainly it has much to recommend it. Countless latent embryonal structures, relatively independent, are tolerated by the organism, remaining inactive till

favored by some concurrent event, the nature of which is incomprehensible, when they may grow according to their bent. Is it not quite as possible there may be similar, relatively independent elements, ready when stimulated to multiply independently? Congenital angiomata often grow without definite limit; pigmented moles, black, slightly raised patches in the skin, with which all are familiar, are composed of tissue exactly resembling sarcoma; always suspicious because of their disposition to proliferate independently. It is most difficult to believe in the infidelity of covenant cells, of sundering the compact which unifies the organism. Emancipation seems almost out of the question. We must not only believe that dependent benignant elements become independent, but indifferent, vicious, infective. In short, the elements of the host, become the elements of a parasite—a parasite so vigorous, corrupt and wicked as to destroy its source.

The painful part of the retrospect of a year is that which recalls those who have been taken from us. The past year has had a very special grief for our association in the death of one of our ex Presidents, Dr. William Owen Baldwin, who died at his residence, and the place of his birth, Montgomery, Alabama, May 30, 1886. He was among the early members of the American Medical Association, and its President in 1869, presiding at New Orleans. His address on that occasion will be remembered as abounding in Christian and patriotic sentiments, eminently befitting the good and great physician. The Committee charged with the organization of the Ninth International Medical Congress, which meets at Washington City this year, had named him as one of its Vice-Presidents. Dr. Baldwin was remarkable for his culture, the eloquence of his speech and the beauty of his diction, and will be remembered as an imposing figure in the history of this great Association.

I need scarcely remind you, gentlemen, that we shall have with us, after a few weeks, the medical men of all nations. Soon we shall extend the hand of friendship to those with whom we have heretofore been united in interest and sympathy in the cause of science. We know that everything is being made ready and that success is assured. Again, you will join me, I know, in the declaration, that a hearty American welcome awaits their advent, and that the Ninth Meeting of the Great Congress will be memorable in the history of its organization.

ORIGINAL ARTICLES.

CONTRIBUTIONS TO THE CLINICAL HISTORY OF SYPHILIS.

BY H. GRADLE, M.D.,
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This paper is based upon the clinical records of a number of syphilitic affections. They all present one or more unusual or exceptional features, which, in the author's opinion, make them worth reporting. The interest which such a record of cases can claim is that of contributing to the certainty of diagnosis and prognosis.

CASE I.—*Syphilitic Iritis—Amaurosis of both eyes of central origin—Recovery under specific treatment—Fatal progress of the brain disease.*

Mr. G., a farmer, 50 years of age, was brought to my office practically blind. About two months ago the sight of the left eye began to fail gradually, while since six weeks the right eye had become sore and weak. He has been in nearly total darkness for a week. He is a person of low intelligence and hence difficult to examine. His wife claims that for the past week or so his mind has been less clear than formerly, and that at times he talks irrationally. Until recently he was in good health. Questioned closely he states that 18 years ago, before marriage, he contracted a chancre followed by an eruption. But his history does not seem reliable. He is more positive, however, that a year and a half ago he acquired a venereal sore. This was followed by an eruption during several months.

Present condition, Dec. 29, 1885.—The patient is somewhat emaciated and feeble. He has no motor or sensory paralysis or other nervous disturbance, all reflexes are normal. He is, however, of slow understanding and his memory seems unreliable. But while in the office he presented no unmistakable evidence of mental derangement. The post-cervical glands are enlarged. There is a mixed pustular and squamous syphilide on the face and on the trunk. He has no headache and never had any. He sleeps well.

The *left* eye is pale, the pupil of medium width and immobile. Light thrown into the eye with a mirror is not recognized with any certainty. Opthalmoscopically the media are found clear and the optic disc and retinal vessels normal. There is a narrow circular comus around the disc with ill-defined outline, but the refraction is practically emmetropic. The *right* eye shows a moderate ciliary injection. The iris is discolored and the pupil narrow and closed by iritic adhesions. There is no pain only a feeling of soreness, in other words simple specific iritis. The movements of the hand can be dimly followed at one foot distance, which degree of sight is less than would correspond to the optic conditions. Moreover the field of vision as tested by throwing light into the eye with a mirror is considerably and uniformly restricted.

The patient received an eye-water of atropin (1 per cent.) and cocaine (2 per cent.) for the right eye. Mercurial ointment was to be rubbed into different parts of the skin twice daily, and one gram of iodide of potassium to be taken four times a day. The proper hygienic directions were of course given in regard to rest, diet and cleanliness of the mouth.

Two days later he returned improved. The right eye was less sore and the pupil a trifle larger. Light was more vividly perceived, and could even be recognized by the left eye

Jan. 4, 1886, the patient walked in without guidance. Left eye had a vision of $\frac{20}{60}$. Its field was

normal in extent. Of colors, red and green were recognized at once—blue with some hesitation, but yellow and orange were mistaken for blue. The pupillary reflex was normal. Ophthalmoscopically no change. The iritis of the right eye had ceased, though the pupil had not yielded any further to the mydriatic. He could follow the hand at eight feet distance, but the right visual field was still restricted. The color perception was not as certain as with the left eye, red being almost deficient. The patient had still the former dull mental condition, being somewhat dazed on trying to recollect, and his answers were not strictly to the point. But this may have been his normal state of intelligence. His wife states that he has talked more rationally at home.

Jan. 7.—There was some further improvement. On account of slight fœtor of the breath, the mercurial ointment was now dropped, but the other treatment continued. He did not return until Jan. 21st when the left eye appeared normal in all its functions with V. $\frac{20}{30}$, while the sight of the right eye corresponded sufficiently to the optic condition of the partially closed pupil, the hand being seen about 12 to 15 feet off. The right visual field was nearly normal in extent, being limited somewhat by the narrow pupil. Colors were correctly named if seen in strong light. The patient did not return after this date, and it was subsequently learned that his eyes had remained well until his death in June, 1886. His physician, Dr. Doepp, attributed the death to brain disease on account of the progressive mental impairment, but no autopsy was made.

The peculiarity of this case consists in the double-sided amaurosis. There is no special interest either in the occurrence of the iritis or in the history of his syphilis otherwise. Whether this was a re-infection, after acquiring the disease some seventeen years previously, I could not decide definitely on account of the patient's low grade of intelligence. The blindness which had increased steadily since six to eight weeks until it had become absolute in the left eye and nearly so in the right eye, yielded so rapidly to specific treatment that no doubt seemed to me proper as to its syphilitic origin. The disease must have been intra cranial since the ophthalmoscope showed no intra-ocular lesion in the left eye. There were no symptoms like paralysis of any of the cerebral nerves which could aid in locating the syphilitic process. It must have been either very diffuse or have involved the optic chiasm, since both eyes had suffered to a nearly equal extent, and recovered at about the same rate. But had the syphilitic inflammation existed in the membranes next to the optic chiasm ordinary clinical experience would lead us to expect a descending optic neuritis, which within six weeks generally reaches the intra-ocular end of the nerve. Since the left pupil did not respond to light during the height of the disease, the optic nerve fibres must have been affected somewhere peripherally from the reflex centers—the corpora quadrigemina. At any rate the process was not of a kind causing increased intra-cranial pressure, like a gummatous tumor; for neither headache nor choked disc existed. It was more like a gummatous meningitis. For although but 18 months had elapsed since the infection syphilitic disease of the membranes of the brain has been known to occur at such an early period.[1] Whether the patient died through a relapse of this lesion cannot be decided from want of data.

CASE. 2.—*Gummatous iritis; Recovery under specific treatment. Neuro-retinitis of the other eye, presumably of intra cranial origin, occurring immediately after nearly two months of specific treatment. Ultimate recovery.*

Mr. St., 38 years of age, was seen March 26, 1886, for a sore eye troubling him since ten days, which had been shamefully neglected by a general practitioner. Misguided by the Doctor's statements the patient did not understand the gravity of his disease, especially as the pain was but moderate. He had been in good health for many years with the exception of a short spell of malaria the previous year. Eighteen years ago he had had a chancre and was treated anti-syphilitically. He did not remember ever having had any secondary symptoms. He is married and has two healthy children.

Present Condition.—The right eye is normal in every respect with V. $\frac{20}{40}$. The left eye which has become more painful in the past two days shows slight ciliary injection and is somewhat tender to the pressure. The iris is slightly discolored, the pupil narrow and irregular, and its rim partially adherent to the capsule. In the substance of the iris on the nasal side of the pupil and close to the pupillary rim there is a greyish red prominent nodule of irregular surface, about two millimetres in diameter. The ophthalmoscopic reflex is very faint on illuminating the pupil. Fingers are counted at eight feet and the visual field is normal.

He was ordered to take salicylate of sodium one gram every three to four hours, iodide of potassium one gram four times per day, two daily inunctions with mercurial ointment, and to drop into the eye a solution of atropine and cocaine every two hours.

Under this treatment a progressive improvement began at once. The pain having ceased within a few days, the salicylate of sodium was soon dropped. Within ten days the nodule in the iris had disappeared. The pupil enlarged moderately, especially on the temporal side, while on the nasal side, next to the former site of the nodule, the pupillary rim had become fastened to the capsule of the lens by a broad synechia. The ciliary injection and irritation diminished steadily. But it was not until the 12th of May that the eye could be said to be entirely free from inflammatory action. During the month of May three minute spots of deposit were formed on the rear of surface of the cornea, although the inflammation was steadily subsiding. Vision had by this time reached $\frac{20}{20}$. The fundus, now visible with the ophthalmoscope, appeared normal, with the exception of slight indistinctness of the edges of the papilla, and veiling of the vessels as they pass from the papilla on the retina. It seemed to me probable that some optic neuritis had accompanied the disease in the iris, especially as the deposits on the pos-

[1] Comp. Heubner, Syphilis of the Brain in Ziemsen's Cyclopædia.

terior surface of the cornea generally indicate some involvement of the entire uvea in the inflammatory process.

The specific treatment had been continued all this time until the end of May, the use of mercury having been suspended whenever the mouth appeared suspicious, while acne pustules and iodine catarrh had repeatedly forced the patient to leave off the iodide for several days. Altogether about sixty inunctions of two to three grams of mercurial ointment had been made. Under the use of pilocarpin once a day or once in two days in a dose of 2 to 25 centigrams, the sight cleared towards the end of May up to $\frac{20}{30}$, at which level it has since remained stationary.

Mr. St. returned June 8th, complaining of severe headache since about a week, coming on in short spells. It was limited to the front part of the head, and generally one-sided, especially on the left side, but sometimes changing to the right. The eyes had not suffered in any way. As the patient attributed the headache to his constipation, he was ordered to take aloes and podophyllin, and to report at once unless relieved. Pressed by business, he stayed away until June 23d. The headache had only diminished gradually in spite of the proper action of his bowels. There was still a feeling of pressure in the head, which any excitement would intensify into a severe one-sided headache. He felt at times dizzy, and most of the time dazed. Since the previous day the sight of the right eye had failed to an alarming extent, while both eyes felt heavy.

The left eye showed no objective or functional change. The right eye, however, had but a visual acuity of $\frac{2}{30}$. The visual field and color sense were normal, but the perception of brightness reduced. There was no anomaly visible about the eye except with the ophthalmoscope. The media were clear, but the edge of the papilla was no longer recognizable, there being an opaque infiltration extending from the disc into the retina in all directions through a distance about equal to the papillary diameter. Within this zone the vessels were veiled, the arteries of normal size, the veins somewhat distended as compared with the other eye. On the temporal side of the disc there were a few minute spots of hæmorrhage. The papilla was not œdematous. Towards the periphery the retina and its vessels were sharply defined. Active treatment was at once begun, consisting in the use of salicylate of sodium, iodide of potassium and mercurial ointment. Nevertheless, vision had sunk to the recognition of fingers at three feet distance two days later. But the patient mentioned that the periphery of the visual field appeared clearer, and that the blur seemed to him more a shadow over the objects he looked at. In other words, there existed a positive central scotoma. No ophthalmoscopic change had occurred.

In view of the fact that the patient had previously had malaria, and the possibility of some malarial poison persisting, quinine, 0.3 three times per day, was now substituted for the salicylic acid. From this time on an improvement both subjective and objective began. But this could scarcely be attributed to the quinine, for the drug was only continued through three days at that time. Subsequently quinine was again prescribed several times whenever the condition remained stationary for a few days, but without exerting any further influence on the rate of recovery. It was not until July 20 that the disease could be said to have terminated.

The final result was a perfect visual field without central scotoma, and vision $\frac{20}{30}$, while ophthalmoscopically the retina and vessels were clear except at the edge of the papilla, where some opacity remained. The specific treatment had been pursued steadily with the exception of some respites on account of mercurial or iodine annoyance. During the early part of July an iodoform ointment, made up with lanolin, was rubbed into the forehead for a few days, without any noticeable influence. Pilocarpin did also not accelerate the rate of progress, but steam baths seemed to hasten the clearing of the sight. The patient has remained well up to date, and is able to use his eyes satisfactorily.

This case illustrates the long period of latency of constitutional syphilis. Eighteen years had elapsed since the occurrence of the chancre, and secondary symptoms were not remembered, in fact denied definitely. Perhaps this latency was the result of a vigorous anti syphilitic treatment, which had been kept up for some months at the time. Gumma of the iris is not of very frequent occurrence. When the patient was first seen the diagnosis rested between tuberculosis of the iris and gumma. The disappearance of the nodule under ten days of anti syphilitic treatment decided this question definitely. The use of salicylate of sodium in this case was based on my own experience with the drug. Inflammation of the iris or ciliary body, whatever be its cause, reacts to salicylic acid in one of three ways. In less than half of the cases I have seen there was no action at all. In about half of my patients with iritis and cyclitis, the pain and intensity of the irritation was controlled to a greater or less extent by the salicylate without the disease being shortened in course. This is quite often true of iritis of syphilitic origin. A small number of cases of iritis, and especially of cyclitis, are unmistakably and rapidly cured by this agent.

But with the absorption of the gumma the inflammatory symptoms did not cease. For nearly five weeks the eye was still reddened and sensitive to the light, and the optic media not perfectly clear. The deposits which appeared towards the end on the internal face of the cornea, indicated nutritive disturbance throughout the middle tunic of the eye, for in simple plastic iritis such deposits are not formed. There may have been during this time a slight optic neuritis, since the edge of the papilla has never presented the sharply cut appearance which it has in the normal eye. It is well known that a mild neuritis does not necessarily reduce sight very much.

The neuro-retinitis of the other eye might have been an independent non-specific disease. But the prodromic symptoms preceding it during three weeks, viz: headache, dulness in the head, and dizziness, suggest a descending neuritis, starting from the cranial cavity, with perhaps some involvement of the

membranes at the base of the brain. Whether this was of the nature of a gummatous inflammation is an open question. The cerebral symptoms certainly diminished in intensity *before* constitutional treatment was resumed, which fact speaks against specific origin. On the other hand, it is contrary to usual experience to find a syphilitic inflammation originating at this late period of the disease immediately after some six weeks or more of thorough specific treatment. The neuro-retinitis improved steadily after the specific treatment was resumed, but not as promptly as I would have expected of a purely syphilitic inflammation.

The conclusion seems to me not unreasonable, that the optic neuritis was a sympathetic affection starting from the inflammation in the left eye, and the primary disease would in that light appear to me as a complication of a gummatous deposit in the iris with secondary irido-choriditis of non-specific nature.

(*To be concluded.*)

LACERATION OF THE CERVIX UTERI.

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When the granite monument which may be erected over the future grave of T. A. Emmet, or the marble urn which may hold his ashes, if his body should be cremated, have long yielded to the slow but certain action of the atmosphere and disappeared from view, then the name of Emmet will still be known, and reverently mentioned in connection with laceration of the cervix. Until the last man and woman have disappeared there will be children born, and as long as children are born, tears of the external os will occur, as neither the art and science of the obstetrician nor the *vis medicatrix naturæ* can prevent them in all cases. Laceration occurs in cases left entirely to nature, as well as in the hands of the most careful and experienced accoucheur. We must start with this idea clear in our minds, that the occurrence of laceration is no proof of poor midwifery or meddlesome interference, although manual efforts to hasten dilation, or the use of the forceps before complete opening of the external os, are a fruitful cause of tears. It is claimed that abortions are also etiological factors. It seems to be the opinion of the majority of the profession that immediate repair is of little avail, as union seldom takes place, and is only indicated to stop the hæmorrhage when large vessels have been torn.

The symptoms of laceration of the cervix are usually those of some uterine disease: backache, headache, leucorrhœal discharge, bearing-down pains, etc. The symptoms vary to some degree, whether the laceration has cicatrized or not; in the latter more or less purulent discharge takes place; in the former this is not the case, and often misleads the patient and physicians in thinking there is no uterine disease.

The raw granulating surface has been called an ulcer, erosion, etc., until Emmet showed that it was a tear, and how it could be repaired. Lacerations are a frequent cause of subinvolution and displacement of the womb, the latter not subsiding until the proper treatment of the former.

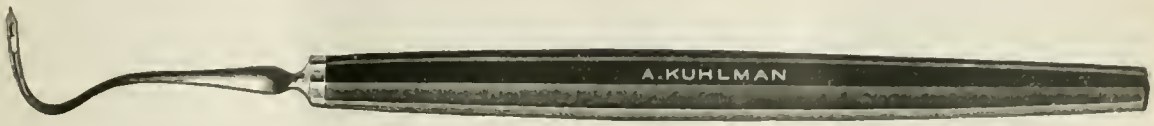
The most troublesome cases are those in which no granulating surface exists, but cicatrization has taken place. Very many of these cases do not require any treatment, as no symptoms are produced. Such cases give the easy-going physician a chance to say that cervical lacerations are of frequent occurrence and do not amount to much, as every woman has a tear if she has given birth to a child. Of course this is partly true; some women have lacerations which have cicatrized and produce no symptoms, but who wants to meddle with such cases? No one ever thinks of treating or operating on cases of that kind. But when we find cases of flexions, versions, descent and enlargements, due to a subinvolution caused by a tear, no pessaries or support, no injection or application will cure the case; only an operation can.

The reflex symptoms produced by cervical laceration are many: such as headaches, spinal irritations, palpitation, neuralgia, disturbances of the stomach, liver and kidneys. These do not come on shortly after the tears occur, but some years later. I believe the cicatrix gradually contracts and compresses some nerve filaments. The cicatrix is often not sensitive to the touch. During the menstrual period the symptoms are generally more marked, varying according to the complications which exist. The sympathetic symptoms and reflex disturbances produced by cervical laceration are almost innumerable, and for that reason the real cause of a woman's illness is often overlooked, and she is treated for almost every disease from acholia to zona.

We must also remember that nearly all observers have called attention to the fact that uterine cancer generally commences at a point of laceration of the cervix, and that we have a right to assume that a long-continued ulcerating tear in the cervix may develop into a malignant growth. Therefore, all cases of cervical laceration which have not healed should be repaired, and those cases which have cicatrized, and produce secondary effects and reflex symptoms, should also be operated on. In my experience, many cases of repeated miscarriages are caused by tears, especially if the latter are deep. Many women anxious to have children can be made happy by an operation for laceration of the cervix. We often meet cases in which women have had a severe labor during the first confinement. The child was born dead, laceration occurred, and no other child was carried to full term, labor always occurring at the third to sixth month. This variety of sterility can be cured.

The operation consists in simply paring the edges, and sewing the raw surfaces carefully together. Considerable discussion has lately taken place on the necessity of removing all cicatricial tissue. Some have even performed a second operation when the cicatricial plug has not been thoroughly removed the first time. For the purpose of making a clean cut and getting away the cicatrix at the angle there is no better instrument than Skene's hawkbill scissors, although a knife and scissors can also be used, espe-

cially the latter. The sewing can be done with various kinds of needles which have been devised for that purpose, and with silver wire, silk, catgut, or silkworm gut. As the uterine tissue is very firm and it is difficult to get a needle to pass through, I have had Mr. Kuhlman, of Detroit, make a needle with a corkscrew curve on a short handle. This enables



one to put the sutures just where he likes, and fit the raw surfaces most accurately. I have tried the various sutures. Silk prepared as proposed by Skene is very good, but requires removal after union has taken place. Silver wire is good, but difficult to remove unless the patient is again put under an anæsthetic. When silver wire is used, I find it the best plan to put four or five perforated shot on the wire, and compress the last one only. This enables one to remove the wire readily by simply cutting it be-

tween the last two shot, pulling all the shot off the wire and grasping the long ends of the latter, simply pulling them out. Catgut is very good, and need not be removed; which is a great advantage. Still, catgut is often unreliable, and is very difficult to tie so that it will hold. I have therefore lately tried silkworm gut, and find it most excellent, if a large size be used and kept thoroughly aseptic. It need not be removed, although it takes a long time to become absorbed. If the circular artery be cut, it may be necessary in some cases to ligate it, but generally the sutures will stop the hæmorrhage.

The operation for laceration of the cervix is therefore very simple: Cut out a wedge-shaped piece, and remove all cicatricial tissue; carefully adjust the raw surfaces with silkworm gut sutures. I believe in chloroform as an anæsthetic.

After the operation the patient is kept in bed for a week. Use carbolized douches twice a day; but this is not necessary, as I have often paid no attention to the patients except to see that no inflammation developed, and then examined them in five or six days, and if union was perfect, allow them to sit up; in a few days they would follow their ordinary vocation.

The operation is not dangerous unless chronic or subacute peritonitis or cellulitis exist, when no operation should be attempted until after all symptoms have disappeared; and even then great care is needed, as the uterus must be very carefully handled, and not much traction made. In these cases, also, the after-treatment must be more strict; the patient must be kept quiet and on a light diet; in ordinary cases I allow a full diet.

My conclusions are:

1. All lacerations which have not cicatrized should be repaired, even if no severe symptoms are produced, as they might be the starting-point of cancer.

2. All cases which have cicatrized and cause sequelæ, such as subinvolution, displacements, with the various reflex symptoms, should also be operated on, great care being taken in these cases to remove all cicatricial tissues.

3. The wedge-shaped piece can be removed with a knife or scissors, the latter to be preferred.

4. Silkworm gut or catgut is to be preferred, although silk or silver wire may be used.

21 Macomb St., Detroit, May 11, 1887.

MEDICAL PROGRESS.

Strophanthus in Heart-Disease. — Dr. J. Hutchinson, Physician to Anderson's College Dispensary, Glasgow, says: I have administered the drug in twelve cases of heart disease; nine were functional and three organic, and I have much reason to be pleased with the success of the treatment, and with the amount of relief I gave my patients.

On looking over my notes I find two cases of mitral disease, in one of which there was a loud murmur, both obstructive and regurgitant. The patient was a woman, aged 45, in whom the prominent symptoms were harsh, hacking cough occurring in paroxysms, dyspnœa, and even at times orthopnœa, palpitation, and œdema of feet and legs. The pulse was intermittent, with a regular irregularity, and beating 90 to the minute. Strophanthus was given in half-drop doses at first, and was gradually increased until she was taking 2 minims three times a day. Almost from the first dose taken an alteration in the sufferings of the patient was observed. The heart-sounds were firmer and steadier; the pulse-beats, though still irregular, were not so fast; cough was much less troublesome, and the palpitation was neither so frequent nor so violent. Along with this there was a copious increase in the renal secretion, which soon relieved both the visceral engorgement and the œdema in the feet and legs. In fourteen days she felt so well as to be able to return to her household duties. In the other case of mitral disease the symptoms were much the same, but not nearly so severe. The same dose was given, and the effect was as satisfactory and rapid.

Another case of aortic stenosis in an old lady, aged 60, who had for years been a martyr to chronic cough, palpitation, and the other symptoms attendant upon stenosis of the aortic orifice, received great relief from a one-minim dose of the drug. In this case palpitation was very violent, the pulse was rapid, and there was extensive passive congestion of both lungs. Œdema of the feet and legs was also present in a marked degree. Under the influence

of strophanthus the pulse became slower and firmer, the congestion in the lungs lessened day by day, and a copious diuresis soon made an alteration in the œdema. The palpitation was trifling compared to what she previously suffered, and her cough was much relieved.

In the other nine cases in which I administered the drug I could find no trace of a murmur, and the purpose for which the medicine was administered was to allay in some measure the turbulent palpitation of which these people complained. In seven of these cases the palpitation seemed to be dependent upon dyspepsia; remedies were given for that condition. Strophanthus was also used in the hope of its exerting a calming and steadying influence upon the heart, which in all of them it succeeded in doing.

The remaining two were cases of disordered innervation. The pulse was very rapid and irregular, the heart's action turbulent—so much so that at times the sounds could not be differentiated, but seemed all merged in a confused rumble. Both of these patients were much benefited, and though the symptoms of which they complained the loudest—namely, palpitation—is not banished, they find that it can be kept within reasonable bounds by a timely dose of strophanthus. All the patients expressed the opinion that the drug had a stimulating effect, which, however, soon wore off. Some of them professed to feel beneficial effects ten minutes after taking their appointed dose. The effect of the medicine was rapid, but did not remain long, and at the end of three or four hours required to be renewed. The system I found quickly became used to the drug, and to get the amount of benefit the dose required to be gradually increased. In prescribing it I combined it with some bitter infusion, and I never failed to get the physiological action, though Dr. Higham Hill remarks that it is important not to dilute it except at the time of using. I have never seen sickness or gastric irritation produced, such as we meet with sometimes after digitalis. The preparation I used was tincture of the strength of 1 in 8 prepared by Messrs. Thos. Christie & Co., London.—*British Medical Journal*, May 7, 1887.

METHYLAL.—Methylal, which was last year investigated from a physiological and therapeutical point of view by Personali, has since been experimented upon by Nicot, and more recently by two Russian physicians—Professor V. K. Anrep and Dr. M. Motrokhin. The results obtained by the latter of these observers are described in a "preliminary communication" in the *Vrach*. In frogs hypodermic injections of from 0.2 per cent. to 0.3 per cent. of the animal's weight produced more or less profound anæsthesia, which, however, quickly passed away. The lethal dose for frogs was found to be 0.8 gramme. Reflexes were weakened, and with large doses temporarily abolished. Thus, after giving a frog 0.3 gramme of methylal, irritation of the central end of the sciatic nerve during the period of complete narcosis produced no effect, but when the animal was aroused some reflex activity returned. Irritation of the peripheral extremity of the nerve showed that the drug had produced no effect upon its reflex action. Warm-blooded animals are more susceptible to the effects of methylal than frogs, a quantity equal to 0.25 per cent. of a rabbit's weight throwing it into a deep sleep lasting from one to two hours; with larger doses, loss of coördination in the movements was first observed, then the animal fell on its side, and remained in a state of narcosis for from three to four hours, after which it quickly recovered. The lethal dose was 0.45 or 0.5 per cent. of the animal's weight the irritability of the cortex of the cerebral hemispheres was lowered both by hypodermic injections and by the inhalation of the vapor. Convulsions due to strychnine and picrotoxine in animals subjected to the action of a moderate dose of methylal were diminished in violence, but when the strychnine or picrotoxine was given in lethal doses death was actually accelerated by methylal. Methylal can be employed in the form of vapor for inhalation, or as a liquid for internal administration. When given hypodermically in an aqueous solution of the strength of 1 in 3, it is very painful, and the skin is very apt to slough near the puncture. Dr. Motrokhin does not think methylal is likely to be of use in poisoning by strychnine and picrotoxine, except when only small quantities of these poisons have been introduced into the system. Regarding inhalations, 2 ounces may be inhaled, and only produce in addition to anæsthesia slight headache and dizziness. No experiments seem to have been made with a view to ascertaining the value of methylal as a surgical anæsthetic, but it does not seem to affect the heart's action perceptibly. Professor Anrep noticed especially that the anæsthesia was more marked on the upper part of the body.—*Lancet*, May 7, 1887.

THE PULSE IN MORPHINOMANIA.—At a recent meeting of the Académie des Sciences, MM. B. BALL and O. JENNINGS described certain characteristics of the pulse in morphinomaniacs. The pulse is normal during the period of satisfaction, while the patient is still under the influence of a recent puncture. When he begins to feel renewed craving, the pulse presents a flat elevated surface; this indicates the diminution of cardiac impulse, and explains the sensation of weakness experienced by the patient. The presence of this flat surface is useful in the diagnosis of morphinomania. Treatment should be directed to the stimulation of the heart.—*British Medical Journal*, May 7, 1887.

COMMON SALT IN MIGRAINE.—DR. RABOW, of Berlin, finds that half a teaspoonful or more of common salt, taken as soon as the premonitory symptoms of an attack of migraine begin to show themselves, will frequently cut it short in about half an hour; similar treatment has also proved of service in epilepsy, as was remarked some years ago by Nothnagel: the explanation being probably in both cases that a violent reflex action is set up, [though the reason and nature of this reflex action is not explained].

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THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, JUNE 11, 1887.

THE MEETING IN CHICAGO.

At one time it was thought that in view of the early meeting of the International Medical Congress there would be a comparatively small attendance at this thirty-eighth annual meeting. These fears, however, are now shown, as we go to press, to be groundless. As early as Monday evening about two hundred delegates and members were registered, and it is now probable that the attendance will not fall short of fifteen hundred. The programme of the Sections shows that the number of papers and addresses is greater than ever before, being almost double the number last year. So far as can be seen at present all portions of the country are well represented except the extreme West. It will be seen that the President's Address, on "Cell Antagonism," is out of the usual line of such addresses. As a paper on the subject of which it treats it may be said to be complete, and no one can read it without instruction. The Association is to be congratulated that its Sectional work has been still further divided by the creation of a Section on Dermatology and Syphilography.

FOREIGN BODY TREATMENT OF SCANTY MENSTRUATION AND AMENORRHŒA.

With the exception of cases of absent menstruation due to constitutional causes and from some ovarian affections, there are many cases of amenorrhœa, or very scanty menstruation, in which the chief fault seems to be with the uterus. Practitioners know that many of these cases are attended with very distressing symptoms, and that relief is urgently required. The administration of emmenagogues and other drugs in such cases is usually attended by but little success; and that the means at our disposal for treating such cases are very inefficient is shown by the number of drugs and measures recommended.

Many years ago DR. JAMES BRAITHWAITE, of Leeds, after reflecting upon the hæmorrhage caused by uterine polypi, introduced small foreign bodies into the uterine cavity, and left them, when he wished to bring on menstruation or increase its amount. Hot baths, iron, aloetic aperients, and alteration in the diet and habit of the patients, were used at the same time. The most convenient foreign body he found to be a small piece of hempen ligature, doubled several times, knotted, and impregnated with pitch. These were carried up to the fundus and left there. Some success was obtained, but they were generally expelled by the uterus before they had done their work. They were therefore abandoned for a Greenhalgh's rubber stem. This he has found very efficient in a considerable number of cases. The stem is carefully washed in carbolized water, introduced into the uterus a week before menstruation is due, or supposed to be due, and left in position. A hæmorrhage will usually result in a few days; but whether it comes on or not the stem should be left in position. While Dr. Braithwaite has had many successes with this method, he has also met with failures. But the method, in his opinion, is the best and most certain means of bringing on absent menstruation, or for increasing a scanty flow. Wynn Williams' stem may also be used, and it has the advantage that it is not easily expelled from the uterus. Dr. Braithwaite has also made what he calls an artificial polypus, to remain *in utero*.

Dr. Braithwaite reports two interesting successful cases treated by the stem, the record of which may be found in the *British Medical Journal*, of April 30. This method is briefly referred to by a few writers, but it is probably unknown to the majority of the profession.

THE MEDICINE OF THE TALMUD.

Some time ago we published an announcement of DR. C. H. VON KLEIN, of Dayton, Ohio, that he would translate and publish the medicine of the Talmud, provided one thousand copies are subscribed for. We take pleasure in announcing that Dr. von Klein has received subscriptions for about five hundred copies. We make this announcement

with more pleasure since this translation is in a large measure a labor of love. It does not seem to be generally known that the compilation of the Talmud began about twenty-five hundred years ago. The works of Hippocrates, which are generally thought to be the beginning of medical history, were written only three hundred years before Christ. This book will, therefore, add three hundred years to the annals of medical science, if nothing more. While it is true there are within it many "childish and irreverent things" relating to medicine, nevertheless to those who carry not creed prejudice it will give more than history. The hygienic portion will be of benefit to sanitary science. The laws regulating separation of women during their menstrual period will be a revelation to the greater part of the profession, and the medical jurisprudence will add much to modern medicine. Besides the medicine and its collateral branches contained in the *Jerusalem* and *Babylonian Talmuds* with all their *Tosephtos* and *Siphri Medrashim*, much will be embodied from the *Rambam* (Maimonidis) *Yorah-Deah*, *Shulchan Aruch*, *Aien-Jacob*, *Eben Ha-Ezeir*, and from many other works of equal antiquity. Probably not less than three years of severe labor will be required to make the researches and translation; and we therefore appeal to literary men of the profession to subscribe, in order that the work may not be unnecessarily delayed.

SOCIETY PROCEEDINGS.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Ninth Annual Meeting, held in the Hall of the Academy of Medicine, New York, May 26, 27 and 28, 1887.

THURSDAY, MAY 26—FIRST DAY.

MORNING SESSION.

THE PRESIDENT, E. FLETCHER INGALS, M.D., of Chicago, called the Association to order, and read

THE PRESIDENT'S ADDRESS.

In referring to *Intubation of the Larynx*, the history of the operation and a description of the instruments used in the operation were given. The method of operation was then referred to. In 1858 an attempt was made in Paris to treat stenosis by intubation. Seven cases were operated on, and of these five died, and two cases recovered after subsequent tracheotomy. In 1880 O'Dwyer introduced intubation, and gave to the profession one of the most useful operations of modern times. In the after-treatment, while the tube is in position, no liquids should be allowed. Sometimes small quantities of liquid can be taken, but the danger of exciting bronchitis or pneumonia is so great that fluid should be entirely prohibited. The largest tube that can be introduced is the one most likely to be retained. The danger of the tube being forced into the trachea was referred to. In four or six days, in favorable cases, the swelling and false membrane will have so much diminished that the tube will be coughed up finally and need not be withdrawn.

The speaker had performed intubation in twelve cases of diphtheritic laryngitis. In three cases recovery followed. By a coincidence, the cases of recovery were the only ones in which the author had charge of the after-treatment. One case lived eight days and then died suddenly an hour after the tube had been removed. Another lived eight days and then died of pneumonia. Details of the cases treated were given. As a result of his experience, he concludes that the treatment after intubation should be: 1. Prohibition of fluids except by enemata. 2. Some preparation of mercury should be given in large and frequent doses. 3. In case of development of bronchitis or pneumonia, respiratory and cardiac stimulants should be given freely but cautiously.

By correspondence and study of the literature he had collected 514 cases with 134 recoveries. The percentage of recoveries will be greater when more care is exercised in the use of fluids. When medicines fail, no time should be lost in providing for the free entrance of air, either by intubation or tracheotomy. Intubation can be done more quickly, more safely, with less shock to the patient and less objection on the part of the parents. The operator should be prepared to open the trachea if loosened membrane should be forced down into the trachea. When the tube fails to relieve the dyspnœa tracheotomy should be performed, unless there is reason to believe that the latter operation will fail. When membrane is loose in the trachea, no time should be lost in the use of the forceps, which rarely succeed, but tracheotomy should be resorted to. The results obtained by intubation are about as good as tracheotomy at all ages, but apparently better in young children.

DR. CHARLES E. SAJOUS, of Philadelphia, read a

STUDY OF SOME OF THE OBJECTIONABLE FEATURES OF INTUBATION.

The principal objections to intubation, according to the degree of danger, are: 1. The tendency to the obstruction of the tube by fragments of membrane. 2. Crowding down of loose membrane during introduction of the tube. 3. Passage of food into the trachea. 4. Momentary arrest of respiration during introduction of tube. 5. Liability of the tube to be coughed out; and 6, slipping of tube into the trachea. The tendency to obstruction was attributed to the limited diameter of the tube; the crowding down of membrane to the length of the tube; the passage of fluid to the weight of the tube; the liability to be coughed out, to the limited diameter of the tube; and the slipping of the tube to the weight of the instrument and the formation of the head.

The author exhibited instruments on the principle

of the bivalve speculum which were intended to embody the suggestions made above. This tube obstructs the larynx very little, leaving the breathing space almost as great as normal. He also exhibited an instrument intended to remove loose membrane from the larynx. The instrument consisted of forceps which could be protruded into the larynx, by an arrangement in the handle, the required distance, and the membrane grasped.

Dr. F. H. Hooper, of Boston, said that while he had no personal experience with the operation, he had watched certain cases in the Boston City Hospital. Since last October, ten cases of intubation had been operated on, with two recoveries. In one case, the attempt to introduce the tube caused spasm, and tracheotomy was performed. In every case there was immediate relief of dyspnœa. In three cases the tube was coughed up and swallowed.

Dr. D. Bryson Delavan, of New York, suggested that feeding with a tube introduced into the œsophagus would overcome the difficulty. This plan can also be used in cases of tracheotomy.

Dr. Morris J. Asch, of New York, remarked that there are a few objections which should be brought to the notice of the profession. One of these is that membrane may be crowded down which is very difficult to remove, even by tracheotomy. Another objection is the difficulty experienced by the ordinary practitioner in the removal of the tube.

Dr. B. F. Westbrook, of Brooklyn, did not think that the weight of the tube is what causes the trouble in deglutition, for the muscles which elevate the larynx are quite strong. It seemed more likely that the difficulty was due to the rigid tube, which holds the larynx open. In normal deglutition the entrance of the larynx is closed.

Dr. D. H. Chapman, of New Haven, said that the most distressing symptom after the introduction of the tube seems to be thirst. It would be interesting to study the cause of this. Could it not be relieved by the use of enemata and by baths. It may be occasioned by the use of the mercury, which might be introduced in some other way than by the mouth. The use of pilocarpin, which, even in small doses, causes salivation, might be of service.

The President said that it is so rare that the tube becomes clogged that it is not necessary to have a skilled attendant. When the tube becomes clogged it is usually coughed up, and, as a rule, it is not necessary to replace it for two or three hours. The attempt to feed these patients through a tube introduced into the œsophagus has been tried in Chicago, but he had not heard any stress laid on this measure.

Dr. J. Solis Cohen, of Philadelphia, gave a description of a

MODIFIED LARYNGECTOMY.

The operation is applicable to those cases in which the disease is not too extensive, and it has the advantage over complete laryngectomy of leaving the greater portion of the thyroid cartilages undisturbed while the respiratory portion of the larynx is removed. On the cadaver the operation can be performed in two minutes. In disease limited to the interior of the respiratory tube, especially carcinomatous disease, it fulfils every indication that prompted complete laryngectomy. The advantages claimed for the operation were: 1. Rapidity, ease, and comparative safety for the patient. 2. The small size of the wound. 3. The preservation of the attachment of various important muscles and ligaments. 4. The retention of important structures in their normal relation; and 5, a firm natural support is left for the application of any artificial apparatus.

This operation should be performed for complete laryngectomy when not precluded by the extent of the disease.

PRESENTATION OF INSTRUMENTS.

Dr. T. A. DeBlois, of Boston, exhibited a portable apparatus for compressing air.

Dr. E. C. Morgan, of Washington, presented a universal powder blower, which could be used in abscesses of the nose, throat, vagina or rectum.

Dr. Allen, of New York, exhibited an improved form of snare which could be used with one hand.

The following were appointed as the Nominating Committee: Drs. Beverly Robinson, of New York, W. C. Glasgow, of St. Louis, and S. H. Chapman, of New Haven.

Afternoon Session.

Dr. John B. Mackenzie, of Baltimore, read a paper entitled

THE PATHOLOGICAL NASAL REFLEX—AN HISTORICAL STUDY.

The fact is established beyond doubt that a causal relation exists between diseases of the nasal mucous membrane and other portions of the respiratory tract and many conditions of distant parts of the body. Hay fever can be traced to the time of Galen. The fact that tickling of the nose would arrest hiccough is referred to by Plato. The irritating effects of the odor of flowers were recognized in very early times. Reference was made to the observations of various individuals in regard to reflex conditions due to nasal disease. During the eighteenth century much was written upon this subject.

Dr. John O. Roe, of Rochester, read a paper on

HAY FEVER. ANALYSIS OF CASES, WITH RESULT OF TREATMENT.

Up to the last hay fever season, the author had treated forty-two cases. A study of these cases tended to confirm the opinions expressed in February, 1883. Some of these views have been modified. Of the forty-two cases, twenty-six were males and sixteen females. The attacks came on between May 1 and August 1. In all, the active symptoms subsided soon after the appearance of frost. In some cases the hay fever dated from a severe attack of cold. In every instance there was disease of the nasal passages. The location of the sensitive areas is not constant, but they are usually most marked over the areas of greatest hypertrophy. The areas have not been confined to the posterior portion of the turbinated bone, nor especially to the anterior portion of

the turbinated bones. In the majority of cases the septum was as sensitive as the turbinated bones. Thirty-one patients suffered with asthma. But twelve patients had a distinctly nervous temperament, while nine were distinctly phlegmatic.

The plan of treatment adopted is to restore the nasal passages to as near as possible a normal condition, and destroy the sensitive areas. These areas are to be destroyed by cauterization. Deep cauterization has been most effective, while superficial cauterization had no marked effect. The condition of the larynx, pharynx and bronchi must not be overlooked. Not infrequently enlarged tonsils will keep up irritation in the turbinated bones. A neglect to cure a bronchitis may account for a return of the disease.

Thirty-five of these cases have practically been cured. Seventeen have remained exempt for periods varying from one to nine years. Four were not relieved, owing to imperfect treatment, and four have been lost sight of. The following conclusions were presented:

1. All cases of hay fever have the initiatory lesion in a diseased condition of the nasal fossa.

2. All diseases of these tissues induce in the ganglionic centres connected with them an abnormal activity, which is reflected to other organs.

3. The sensitive areas in the nose are not found in any particular portion of the cavity. Nor are there any zones which, when irritated, produce always the same manifestations.

4. The direction in which the irritation is reflected is always in the line of least resistance. Irritation in the same region may be reflected in one direction at one time and in another direction at another time.

5. The disease in the nose may produce disease in other portions of the respiratory tract, which may become independent centres of irritation.

6. The affection recognized as hay fever is due to local irritatives brought in contact with the sensitive areas in the nose.

7. The affection is not *per se* neurotic, nor is the so-called neurotic condition of the person necessary to render a person susceptible to local irritation applied to the air passages. It is not necessarily associated with the nervous temperament.

8. The neurotic condition which is often regarded as the cause of the hay fever, is often the result of the local irritation.

9. By careful and thorough treatment of the disease of the nasal tissue, combined with that of other portions of the respiratory passages below, which have become secondary sources of irritation, we need not fail to cure hay fever.

DR. C. E. SAJOUS stated that at the last meeting he had reported some cases in which the use of the cautery had been only of temporary benefit. He now believed that the failure was due to the fact that the cauterization was only superficial. Since he had employed deep cauterization he had cured the disease.

DR. J. N. MACKENZIE regarded hay fever as a neurosis. That it is a disease of the nose producing reflex symptoms he held was not the fact. Where, in hay fever, disease of the nose is found, the question arises whether this is primary or secondary, or whether it is only an accidental condition. There is, I think, always some more central cause than the affection of the nose. Where the disease is recent, it may possibly be arrested by local treatment, but where the affection is of long standing, he did not believe that simple local treatment of the nose would overcome the difficulty. Last summer, in treating hay fever, he made no application to the nose, and his results were better than ever before. He gave in large doses zinc, nux vomica, quinine and arsenic.

DR. F. I. KNIGHT, of Boston, asked if any of the members have had any experience with diversion of nervous influence in any of these cases? In one case coming under his notice the attack was arrested by the patient breaking his leg. Another patient had the attack arrested after consulting a disciple of mind cure.

DR. W. C. GLASGOW, of St. Louis, thought that the evidence shows that hay fever is not a local affection, but that it is a general nervous disturbance. It is difficult to judge of the influence of treatment, for in the same individual the severity of the attack varies from year to year. He believed that constitutional treatment is an important element in the case.

DR. F. H. HOOPER had regarded hay fever as a neurosis and had treated it in the manner spoken of by Dr. Mackenzie. This accomplishes great good, especially in young children.

DR. J. SOLIS-COHEN thought that the views of Dr. Mackenzie are very nearly correct. Many cases occur in those who are overworked and have resorted to stimulants. These patients are often benefited by rest in the mountains or at the seashore. He had obtained benefit by tonic treatment, modifying the diet, and restricting the use of meat. The more we look upon this as a constitutional affection and the less as a local condition the sooner will we get at the truth. A large number of these sufferers have obstruction in the nasal cavities, but many have no such obstruction.

DR. J. O. ROE considered hay fever as the reflection of some irritation from the nasal chambers, which irritation is produced by some foreign substance coming in contact with the mucous membrane of the nose. Irritation reflected from other situations to the nasal chambers is not hay fever. He thought that Dr. Mackenzie includes some such cases. He had never seen any evidence to show that this was a neurosis.

DR. D. BRYSON DELAVAN read a paper on

THE TREATMENT OF ATROPHIC RHINITIS BY APPLICATIONS OF THE GALVANIC CURRENT.

Some years ago Dr. E. L. Shurley, of Detroit, recommended the use of the galvanic current in the treatment of dry catarrh of the pharynx, and related cases in which benefit had followed its use. He also advocated the same treatment in atrophic rhinitis. There is no disease which is more discouraging to the physician and patient than this of atrophic rhinitis. The author had tried this method of treatment in certain cases. The positive pole of a constant current battery was applied to the nape of the neck,

while the negative pole was applied directly to the mucous membrane by an electrode consisting of a copper wire around which absorbent cotton is wrapped. The strength of current employed varied from 4 to 7 milliampères. In more recent cases of the affection the effect is marked, but even in the older cases the method is not without benefit. The author has found this measure useful in these cases, and reported illustrations. The objection to the method is the amount of time which it requires.

Dr. T. A. DeBlois, of Boston, had applied this treatment in two cases, one of atrophic and the other of hypertrophic rhinitis. In the first cases there was almost complete loss of smell and taste. The applications were made three times a week for six months. Both cases were improved.

Dr. Knight asked what experience the members had with plugging of the cavity of the nose? He had used this measure, and produced relief of the most distressing symptoms. One side of the nose is thoroughly stopped with a piece of absorbent cotton, which is allowed to remain three hours during the morning. It is then removed and the other side is stopped in the same way for three hours in the afternoon.

Dr. Roe had used the plugs of cotton, but with no other effect than to set up irritation. He had used with marked benefit the application of a weak solution of nitrate of silver, 5 or 10 grains to the ounce, the parts having previously been cleaned. This, applied every other day, almost entirely relieved the symptoms.

Dr. Sajous had used in two cases, with absolute relief of the symptoms, the application of chromic acid in a solution made by simply allowing the acid to absorb moisture from the air.

Dr. S. H. Chapman, of New Haven, read a paper on

MYALGIA OF THE PHARYNX AND LARYNX.

He called attention to certain peculiar conditions of the muscles of the upper air passages which occur oftentimes in malarial disorders, and which, on account of their severity, are brought to the notice of the specialist. The muscles most likely to be affected are the pectoral, the muscles of deglutition, and those of the voice.

Dr. F. I. Knight, of Boston, read a paper on

SENSORY AFFECTIONS OF THE THROAT.

The principal experience of the author had been with hyperæsthesia and paræsthesia. In hyperæsthesia the general condition of the patient is, as a rule, not sufficiently considered. The worst cases are alcoholic subjects and those with digestive disorders. These will often yield to withdrawal of the alcohol or regulation of the diet. Astringents are frequently of service. In the cases of paræsthesia which he had seen there had been a feeling of fulness, pressure, burning, globus hystericus, or the sensation of a foreign body in the throat. In these cases there is impairment of the general nervous system. The exciting cause may be some disease of the throat. Fatigue usually exaggerates these sensations. He had never met with paræsthesia of the larynx as the earliest symptom of phthisis, as had been claimed by some observers. The prognosis in most cases of paræsthesia is good if a careful treatment be carried out. The treatment of the neurosis of sensation must be aimed to cure the constitutional vice.

Dr. W. C. Jarvis, of New York, recently saw a man complaining of pain on either side of the tongue which had existed for the past two years. He was suffering from the effects of syphilis, and with the neuralgia of the tongue there was frontal neuralgia and pains in other parts of the body.

Dr. Sajous had seen two or three such cases. In one there was follicular pharyngitis, and although the pathological condition was cured, the pain remained. The pain seemed worse in damp weather, and the gentleman had the habit of bathing every morning in cold water. The history of the case seemed to indicate a rheumatic trouble, and such may have been its nature.

Dr. W. C. Glasgow: Many of these cases he thought were due to malaria, and some to the gouty diathesis. Sometimes the trouble is kept up by a single hyperæsthetic follicle. A reduction of the inflammation will be followed by a subsidence of the neuralgia. Sometimes the source of irritation is found with difficulty. In the rheumatic cases there is usually exacerbation at night. These affections in some cases appear to have a tendency to the induction of melancholia.

(*To be concluded.*)

SUFFOLK DISTRICT MEDICAL SOCIETY.

Section for Clinical Medicine, Pathology and Hygiene.

Stated Meeting, April 31, 1887.

Dr. F. L. Knight, Chairman.

Albert N. Blodgett, M.D., Secretary.

Dr. F. C. Shattuck reported *four cases occurring in hospital practice:*

TUBERCULAR PERITONITIS; SLOUGHING OF THE UMBILICUS AND FISTULA.

P., æt. 24, entered the hospital June 21. A sister died of phthisis. About a year before entrance the patient began to suffer from attacks of abdominal pain, distension and tenderness, lasting five to ten hours, and relieved by bilious vomiting. These attacks recurred at intervals of about a month. The last was four weeks before entrance; he did not rally from it but felt poorly, lost flesh and strength, and had moderate diarrhœa much of the time. He had no cough or other pulmonary symptoms. Pulse 100. Physical examination showed slight consolidation at the right apex without softening. In the umbilical region a rounded cake-like tumor with irregular surface, four inches in diameter, and apparently covered over by intestine, was felt. On the right side of the tumor and in the right iliac fossa, tender-

ness was marked. Diagnosis; tubercular peritonitis.

July 3. The patient was evidently weaker. Moderate fever was constant with evening exacerbations. The abdomen was more distended, peritoneal crepitus could be felt; night sweats, occasional vomiting, and abdominal pain were noted. The scanty sputum was examined for bacilli with a negative result.

July 14. Several days before this date it was noticed that the skin about the navel was getting red and œdematous. On this date a small perforation took place through which with each inspiration was emitted offensive gas, on deep inspiration offensive greenish fluid; during the act of vomiting this fluid was ejected with force.

July 18. The fistula gradually enlarged, and the patient was transferred to the surgical side.

July 19, and again on the 22d, dejections of normal consistency passed the rectum, the only discharges of any kind through that outlet between the appearance of the perforation and death, which took place July 28, from exhaustion.

Autopsy.—The right pleural cavity was obliterated by old adhesions, a few of which were also found on the left side. The apex of the right lung was thickened, shriveled and dense; on section, numerous small gray tubercles, and some pigmented fibrous tissue were seen. Throughout both lungs there was occasional cheesy patches, a half inch or more in diameter, some of them partially softened, surrounded by deeply injected borders containing miliary tubercles. A fistulous opening through the umbilicus contained a drainage-tube entering the peritoneal cavity partially obliterated by old adhesions. This encysted cavity extended upwards beneath the right lobe of the liver, and downward on the right to the pelvis, containing masses of necrotic fat tissue (omentum), and several ounces of offensive fluid; it communicated with the rectum above the internal sphincter by an opening in the anterior wall one-half inch in diameter. The intestine contained tubercular nodules and ulcerations, chiefly in Peyer's patches. The pathological diagnosis was then as follows: Chronic pulmonary tuberculosis, acute bronchitis, tubercular peri-bronchitis, chronic tubercular peritonitis and enteritis, umbilical fistula, perforating ulcer of rectum. The special reason for reporting the case is the comparative rarity of spontaneous porforation of the abdominal wall in tubercular peritonitis. The seat of the perforation was also somewhat remarkable, the strong fibrous structures of the umbilicus being completely destroyed.

CIRRHOSIS OF THE LIVER; ASCITES ABSENT UNTIL A FEW DAYS BEFORE DEATH.

A widow, æt. 49, entered my service October 9, 1886; she was the mother of nine children, the youngest 13 years old. She had never had any special illness, but had overworked herself from time to time, and been obliged to go to bed several days to rest. The past two or three years these periods of overstrain had been more frequent. About three months before entrance she had an attack of "dysentery" with pain, bloody discharges, and tenesmus. The blood in the stools was quite abundant and persisted for three weeks; during the first week of her illness she vomited blood several times in considerable quantities; she was six weeks in bed. Since she got up there had been no recurrence of hæmorrhage; but the blood loss was not made up and she steadily lost in flesh and strength, and was entirely unfit for any work; nausea and vomiting after taking even small quantities of food, unattended by any pain, had been prominent symptoms. The two days before entrance vomiting was still more frequent, and she again passed blood from the bowels, but this time without pain and the blood in clots. The patient was very anæmic, very slightly jaundiced, and the skin over the neck, arms, and body contained capillary dilatations. The hepatic dulness was increased in width both upwards and downwards, and the edge of the liver was distinctly felt an inch and a half below the ribs; its surface was lacking in smoothness. The abdomen was distended with gas, but no ascites could be positively made out. The spleen was not enlarged. The urine contained a small trace of albumen and a few casts. A very loud systolic souffle was heard over the heart, loudest in the pulmonic area; over the apex a thrill could be felt, but there seemed to be no enlargement of the organ. Diagnosis: cirrhosis.

October 10. Passed a large blood clot and about ℥iii of fluid blood with fæces.

October 11. There was now unmistakable ascites, the liver could no longer be felt, the diaphragm was pushed up, and there was slight œdema of the abdominal wall and feet. The vomiting continued from time to time, but there was no recurrence of hæmorrhages of any kind.

October 14. The ascites had increased rapidly, and caused so much distress that she was tapped. After the withdrawal of the fluid the roughness of the liver surface was distinct, and the contour of the lower edge of the organ could be well made out. Considerable relief followed the tapping, but the patient gradually failed in strength, and October 16, six days after entrance, she died.

A full autopsy could not be secured, but my efficient house-officer, Mr. L. T. Stevens, succeeded in extracting the liver, in two portions, and some of the other organs through the rectum. The heart was normal and showed no anatomical explanation for the very loud murmur heard during life. The lower portion of the ileum and upper part of the colon were full of black, tarry material. The liver was not materially altered in size and was eminently cirrhotic. The spleen was increased in density, though not in size. The kidneys showed moderate chronic interstitial changes. It is a matter for regret that it was impossible to make the autopsy in the usual way. To remove the liver through the rectum it was necessary to cut it in half, and the precise condition of the portal vein and its main branches was thus impossible to make out. The extreme rapidity with which ascites appeared and progressed suggests the possibility of its dependence on thrombosis of the portal vein. The severe intestinal hæmorrhages showed that great portal congestion had existed for some months, and it also seems pos-

sible that in the occurrence of free bleeding is to be found an explanation of the late advent of ascites, the hæmorrhage relieving the stasis.

HÆMOPHILIA.

H., a clergyman, æt. 52, entered the hospital, July 12, 1886, for tonsillar abscess, of which he had had several previous attacks. The first was treated by incision, which was followed by hæmorrhage that did not finally cease until six weeks had elapsed. In a day or two after entrance the abscess broke, and the day after this he began to pass bloody and smoky urine, the source of which the microscope showed to be the kidneys. He reported that hæmaturia had followed each previous attack of parenchymatous tonsillitis, and was also brought on by unusual mental excitement or exertion. In all, he thought he had had as many as 150 attacks. If he kept quiet, and drank large quantities of water, the bleeding generally ceased in five or six days, but if he worked it lasted from twenty to thirty. When a child, slight knocks produced large, black-and-blue, painful swellings, which were slow to subside. When 21 years of age he had an epistaxis which threatened life, but bleeding from this source has never recurred. The tendency to bleed has, he thinks, diminished as he has grown older, but slight cuts are still followed by free and persistent hæmorrhage. No history of hæmophilia in either parent or grandparent could be obtained; all were long-lived. Of his seven brothers and sisters, one brother shows this tendency, and a sister's son exhibited the hæmorrhagic diathesis to a marked degree, finally dying of persistent hæmaturia.

Hæmophilia, like color-blindness and pseudo-hypertrophic paralysis, is transmitted through the females of a family, the females themselves generally escaping. The tendency can thus oftentimes be followed through many generations. My patient is an unusually intelligent man, and the fact that he can not trace the diathesis behind his own generation is one reason for reporting the case.

A CASE OF TETANY(?).

A stable-boy, 19 years of age, of good family and previous personal history, entered the hospital September 30, 1886. He was muscular, well built, and ruddy. He said that for the past year there had been slight, but constant, stiffness of the jaw, which had not hindered speech or mastication, but had been sufficient to give him a constant desire of moving the jaw from side to side, and this had now become a habit. The day before entrance, without any assignable cause or any warning, the stiffness of the jaw increased very much, the hands and forearms became numb and rigid; also the legs, to a less degree. This was soon followed by general tremor. The whole attack lasted some ten minutes. During the attack he had a dull feeling in the back of his head, whence the numbness and stiffness seemed to start. There was no loss of consciousness or disturbance of vision. He had three such attacks yesterday, and two to-day. In the intervals between the attacks he felt perfectly well. On entrance, the patient was in the midst of an attack, and was reported as having a chill. The temperature was 99.4°. By the time the house officer reached him the attack had nearly passed, and his condition was as follows: He was much excited, free from pain, but complained of a disagreeable, indescribable sensation over the whole body. The pulse was rapid and strong, the breathing quickened. The expression of the face was peculiar, suggesting the *risus sardonicus*. The masseter muscles were hard to the touch; speech was difficult; there was marked stiffness of the arms and hands, the fingers being semiflexed. Efforts to strengthen the fingers encountered resistance, and caused slight pain. The legs were also somewhat rigid.

October 1. I saw him for the first time. During the night he had had an abortive attack. Examination of the internal organs gave entirely negative results. As I finished testing the reflexes, which were not remarkable, an attack came on, preceded, for a few moments, by discomfort slight mental excitement, and forced respiration. Stiffness then came on in the hands, arms, and fingers, which were all semiflexed: the thumbs were held firmly between the first two fingers. The spasm was tonic, with slight tremor at times, and forcible attempts to counteract it caused pain. The mind was perfectly clear, and the patient was positive that he had no real pain, though decided discomfort was caused by the rigidity of the muscles. After fifteen or twenty minutes the stiffness disappeared entirely. Whether this result was furthered in any way by the inhalation of a little ether, I cannot say. He was put on a full dose of bromide and chloral, every three hours, for several days. Slept nearly all the time, and had no more attacks, either spontaneously, on testing the reflexes and the electrical reactions, or during pressure on the brachial artery and nerve. There was no increased electrical reaction of the muscles, the current being passed through the nerve.

October 9. The patient was discharged, apparently well in every respect, except that slight stiffness in the jaw persisted. The diagnosis seemed to involve the consideration of only three affections: tetanus, hysteria, and tetany.

The feature of the case, which is chiefly suggestive of tetanus is the stiffness of the jaw, but this had been present for a year; this fact, with the absence of rigidity of the neck and back muscles, and the transitory character of the attacks, with entire freedom from symptoms in the interval, warrant us in excluding tetanus. Hysteria is not so easily, and I do not feel that it can be positively excluded, especially as Dr. Weir Mitchell to whom I very briefly stated the case, thought it probably of that nature. But, apart from the attacks, there was nothing whatever about the boy to suggest hysteria. He dreaded the attack, as indeed, do hysterical women oftentimes, for that matter. During the attacks he was perfectly reasonable, and he was glad to be discharged from the hospital. In the diagnosis of hysteria, the impression which the individual makes upon the observer counts for something, and this impression was, in the case before us, opposed to such a diagnosis. Moreover, the diagnosis tetany, in a mild form, explains very well the symptoms.

Tetany is a disease which is so rare with us—I can find no mention of it in Pepper's "System of Medicine"—that I may be pardoned for the following brief description of it: First described by Dr. Dance, who called it "intermittent tetanus," the term "tetany" was first applied to it by Corvisart, and later adopted by Trousseau, who also called attention to its comparative frequency in nursing women. It is classed as a neurosis, affects young adults by preference, and is characterized by intermittent, tonic contractions, rarely of the trunk and face, most frequently of the upper extremities, and chiefly of the flexor muscles, the intellect always remaining clear. It is bilateral. The attacks are generally preceded by somewhat ill defined prodromata, and recur at variable intervals during periods of a few days to months. In the intervals between attacks, patients appear well. Trousseau first showed that attacks may be brought on at will by pressure on the nervous and arterial trunks, the spasm ceasing as soon as the pressure is relieved. Erb has shown that the muscles are stimulated with undue ease by means of electrical currents through the peripheral nerves. As long as these two phenomena are present, there is a liability to the recurrence of the attacks. Attempts to elicit the phenomena in my case failed, but the patient was already under the influence of chloral and bromide when the attempts were made—a fact which may or may not be of importance. The affection nearly always passes off without leaving any trace behind it. After carefully considering all the facts in my case, I repeat that I am inclined to consider it as one of tetany of a fairly mild form, and very short course—three days. At the same time, I am far from wishing to suppress the points opposed to this diagnosis, namely, the trismus of a year's duration, and the failure to bring out the signs of Trousseau and Erb, on which the books lay considerable stress.

DR. MINOT said that Dr. Shattuck's case corresponds closely with the description of the disease in a paper read by Dr. Lyman, of Chicago, at the annual meeting of the Association of American Physicians, in June last, and printed in the Transactions of the Association. Other cases were reported at the same time by Dr. Carpenter, of Pottsville, Penn. I should say that the disease is not extremely rare in children under four or five years of age. We see the thumbs bent toward the palm of the hand, the other fingers partially flexed, and the toes strongly flexed. There is usually some swelling of the hands and feet. These children are always feeble, insufficiently nourished, and often bottle fed, perhaps undergoing the process of dentition. In one case, that of a child, three months old, under my care, which was artificially fed, immediate improvement took place when a wet-nurse was procured for the patient, who is now fifteen years old, and in good health. I have never seen a case in an adult which I recognized at the time, but possibly that of a physician who consulted me, and also Dr. J. J. Putnam, might come under this category. The movements were very striking, and corresponded to those in one of Dr. Lyman's cases, which were communicated to him by another physician.

With regard to the subject of hæmophilia, I think it remarkable that the now well-known spontaneous hæmorrhage of new-born children (umbilical hæmorrhage), which is to all intents and purposes the same disease, although fatal in eighty-four per cent. of the cases, yet in the few cases which recover does not recur, the hæmorrhagic tendency being as it were, extinguished, as I have seen in several instances.

DR. PUTNAM: I will merely speak of the case mentioned by Dr. Minot. I have never seen any of these attacks, and cannot recall the case very accurately, but it certainly did not suggest itself to me at that time as a case of tetany. The only case that I have seen occurred in an under-fed child of not more than a year old. In adults I have never seen it. I have seen a large number of nervous diseases at the hospital, probably five hundred a year for a number of years, and I have never seen a single case of this kind.

DR. WEBBER: I remember two cases of tetany; I was asked to see a patient several years ago, the muscles of the legs and trunks were affected, the arms less so. When the attack came on the patient suffered very severely from a strong muscular contraction which could not be overcome by manual force. Ether had been used to some extent for relief. The drug which gave the most relief was fluid extract of conium, after some doses had been taken at intervals of two hours, the attacks ceased; the man got well. He had had the affection for a number of days before I saw him. The other was a case in which the arms were chiefly affected, the trunk was not affected. The spasms had continued for several weeks, several attacks each day, but nothing I could do gave him any relief. I tried conium, electricity, etc. The attacks were quite painful. The man came to see me several times but obtaining no relief, became discouraged and I saw no more of him. The attacks were very similar to those described by Dr. Shattuck.

DR. KNAPP: Tetany is so rare an affection that I may be justified in citing a case which resembles some of those spoken of to-night. The patient was a neurotic, poorly-nourished boy of fourteen, who had been at some charitable school, where his food and hygienic surroundings were not of the best, and where, according to his story, he was not very well treated. A week before he came to the City Hospital, he held his breath for some time in order to avoid a disagreeable smell, and after this he began to have cramps, numb spells, and "pins and needles" sensation in his hands and feet. The cramps affected the whole body, and the pain was so severe as to make him cry out. These came on quite frequently. During the cramps he found it difficult to speak or move. They lasted from half a minute to a minute. He had occasional sick headaches and was rather costive. He was not strong, and was rather deficient mentally, and, as I said, was poorly-nourished, and rather emaciated. While in the out-patient room he had an attack which I was able to observe. He seemed nervous and agitated as it came on. He said that the attack began in his feet and went up, the muscles of his abdomen being most affected. He stood up, his limbs were rigid, his arms were by his side with the fingers much extended and

somewhat abducted, his face was drawn with an expression of pain—whether from spasm or voluntarily from pain, I could not say,—he made no movement, except a slight general tremor, and he made no answer to my questions, because he could not move his lips and tongue he told me afterwards. He understood perfectly what was said during the spasm. Motion relieved the spasm. After recovery from the spasm I examined him, finding nothing abnormal in the chest. Pressure was made over the median nerve and brachial artery, and soon after a second spasm came on. Further pressure, after this, did not excite another spasm, so I am disposed to regard this as merely a coincidence. I then examined him with electricity. The muscles and nerves of the arms responded to a very mild faradic current. With the galvanic current KaSZ=AnSZ with $\frac{2}{10}$ to $\frac{3}{10}$ Ma. in the various muscles of the arm. The median nerve responded to $\frac{2}{10}$ Ma. The boy was sent into the hospital, but I am unable to give any further account of him except that a diagnosis of pavor Mocturnus was made, which was only a part of his trouble. I am still unwilling to call this case tetany. The spasm involved the muscles of the trunk, which is rare except in the severest forms of tetany; the fingers were extended and abducted, instead of being flexed and abducted as in the hand when it is about to be introduced into the vagina; there was no undue excitability of muscle or nerve to electricity, and the attacks were not provoked by pressure on the nerve or artery. Such a combination of symptoms, therefore, is not like the symptom complex of tetany, as given in the books, yet the condition was certainly curious.

Dr. Weeks: I have met one family of bleeders, who did not seem to feel the law of transition laid down by the authorities. Some five or six years ago I was called to a little child about two years of age, who was teething, and had a slight abrasion of the gum from which a persistent hæmorrhage had been going on for some time. I applied styptics, and after a time the bleeding ceased and has never recurred. I learned that the elder boy, some ten or twelve years of age, was troubled in the same way when he was an infant, and had since outgrown the diathesis. The family were of German extraction on the mother's side, the father was an American I believe. The mother seemed quite an intelligent woman, and said that her father was a physician, and that the case of the elder boy troubled him somewhat; he said he knew of no cases of the kind in his family or his father's family. This same boy I was called to treat, some two years afterward. I went to Melrose where the family had moved, and got there perhaps an hour after being notified, as I was out when called, and when I got there he had died of epistaxis.

Dr. Baker asked whether a tendency to umbilical hæmophilia was ever transferred to the offspring? Whether their children showed it?

Dr. Weeks had never seen a case of direct transmission. The case he mentioned was that of a young lady now married; he went to attend a relative of this patient, either a sister of hers; the sister of the first one who died, was a victim of this disease. His impression was that she was married and left a son about eight or ten years old. He has never had any disposition to bleed. These cases are almost always hereditary. The remarkable point was that when the patient recovered, she recovered completely and permanently and never had another attack.

Dr. Blodgett had had an opportunity of learning the history of one case similar to that reported by Dr. Shattuck, of a certain family of which I have considerable knowledge. This patient, a male, was one of several children of the same father and same mother. He is the only one who showed a disposition to bleed. On several occasions he bled alarmingly from the nose, the surface was blanched, he became unconscious, and was evidently in the last extremity. He has not had other forms of hæmorrhage, and the nose-bleed was the only accident he dreaded and from which he expected to lose his life. He is now fifty or sixty years old. Certainly the greater part of his life has been passed in imminent peril from loss of blood, and he has been at death's door from this cause a number of times. I do not know that I am warranted in calling this a case of hæmophilia, though the hæmorrhage was very severe in its character.

Dr. Henry Jackson read a paper on

MYOSITIS UNIVERSALIS ACUTA INFECTIOSA, WITH A CASE.

I saw last spring in Strassburg the following rare case. The above diagnosis, made by elimination during life, by Professor Kussmaul, was sustained by the result of the autopsy performed by Professor von Recklinghausen. The case entered the hospital May 18, and was demonstrated in the clinic May 22:

Woman, aged 36; family history good; she has two healthy children; lives in a district apparently healthy; no one else sick in the house. Was never sick before so far as she knows. Six weeks ago first felt sick (unwohl). Malaise, inability to work; had a red, papular eruption on the face, pain in the neck, pain in swallowing. She was treated for a sore throat. The eruption disappeared in a week's time and treatment. After the disappearance of the eruption, first noticed swelling, accompanied by pain in the shoulders, legs and sacral region; the swelling in legs soon passed off, appearing in the arms. Last two weeks pain in the neck, swelling less marked. The pain, which was first sharp, has become dull (dumpf). Pain has always been in the muscles and not in the joints. Throughout the sickness appetite fair, thirst marked, sweating, moderate fever, constipation, no vomiting, urine scanty and high-colored.

On entrance, May 10, slight fever, mind clear, slight œdema of face and extremities, muscles of extremities flexed and rigid; extension caused pain. Paresis of soft palate, electrical reaction in general diminished, reflexes absent (aufgehoben). Examination of chest and abdomen negative. During last few days high fever, rapid respiration, pulse 140. Several small patches of pneumonia (Schluck pneumonie).

Professor Kussmaul considered the diminished electrical reaction as due, in part, at least, to the

œdema, the abolition of the reflexes as of peripheral, not central origin; he considered the pneumonia as very probably due to particles of food which get into the lung on account of the difficulty in swallowing. Mind clear to the last; no symptoms pointing to disease of the abdominal organs. Death on May 24; ultimate cause, broncho-pneumonia.

Trichinosis was first thought of; eliminated by the history (her husband did not allow her to eat raw sausages), by the absence of the gastro-intestinal symptoms as prodromata in this disease, by the fever in present case. Professor Kussmaul said the case reminded him clinically of one in which thousands of miliary aneurisms were found all over the body. The fever, the widespread muscular pain and œdema pointed to a diffused myositis without any discoverable local cause, hence the diagnosis was as stated.

Autopsy, May 25. Brain and spinal cord presented nothing abnormal. Veins of abdominal cavity very full of blood. Spleen soft, enlarged. Stomach and intestines presented nothing abnormal. Stricture at the entrance of the pelvis of right kidney into the ureter, which had caused hydronephrosis of right kidney with almost total disappearance of the substance of the right kidney. Left kidney much enlarged, otherwise not abnormal. Heart pale. In both lungs several small patches of pneumonia. The muscles throughout the body, especially in the extremities, the trunk and the face (orbicularis), pale in color and moist; many small hæmorrhages in sheaths of the muscles; rupture of left rectus abdominis, with hæmorrhage.

Under the microscope the muscles showed waxy and granular edges; fibres broken; small-cell infiltration in the interstitial tissue, in no place amounting to the formation of abscesses visible to the naked eye. Nuclei of the muscles increased markedly, showing a real proliferation of muscular tissue, as well as a degeneration. I heard no report of a bacteriological examination, but reasoning by analogy with diseases which have been studied, we may say that bacteria were most probably associated with the inflammation.

Professor von Recklinghausen told me that when he was an assistant to Virchow he had seen two similar cases, but I have been unable to find a report of them. We have here some acute disease of a febrile nature, rapidly ending in death. At the autopsy a widespread myositis is found, otherwise no pathological lesions which can be considered as a primary cause of the severe symptoms existing during life.

Dr. Blodgett kindly called my attention to a similar case published lately in the *British Medical Transactions* (December 18, 1886, p. 1215): Acute myositis (Mr. Treves). After exposure to severe cold, the following symptoms were manifested; chill, malaise, fever, loss of power in arms, cramp like pain. Similar pains in legs. Gradual recovery in six weeks. Mr. Treves divides myositis into; (1) Simple, due to injury. (2) Myositis from cold. (3) Infectious boil or osteo-myelitis. (4) Attending various infectious diseases. (5) Trichinosis. This is the only case I find in the recent medical journals, German or English. In the fourth volume of "Virchow's Archives," (1852), is an article by Virchow on myositis. Anatomically, he divides myositis into: (*a*) Interstitial. (*b*) Parenchymatous. (*c*) A combination of (*a*) and (*b*). Etiologically divided into: (*a*) Traumatic. (*b*) So-called muscular rheumatism. (*c*) Syphilitic. (*d*) Septic. Then goes on to say: (*e*) "One sees finally abscesses occur in muscles under conditions as yet not made out, under conditions spoken of by the Vienna school as 'spontaneous pyæmia.' General symptoms are chill, high fever, disturbance of heart, severe widespread pains; death in a few days. Such processes may be of spontaneous origin, more commonly due to other septic diseases, especially typhoid."

A similar allusion I find in Förster. In Lobstein a case of death where the only lesion was a myositis (general?) and local patches of pneumonia. In none of the more recent works on pathology do I find any mention of a myositis, widespread in area and independent of some preëxisting centre of infection.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, April 7, 1887.

THE PRESIDENT, THOMAS M. DRYSDALE, M.D., IN THE CHAIR.

(*Continued from page 640.*)

THE ANTISEPTIC PAD.

DR. HIRST exhibited the antiseptic pad used by Richardson, of Boston, and Garrigues, of New York, to prevent the entrance of pathogenic germs to the vagina after labor.

DR. PARVIN was not impressed with the necessity for the antiseptic pad, believing that as good results could be had from antiseptic napkins. The oiled silk or muslin used in making it, it seemed to him, might hinder the ready escape of the lochia. After labor the vagina is practically a closed canal, open only for the egress of uterine discharge, and disease germs cannot enter unless that canal be opened by some manipulation of the nurse or the physician, as in giving a vaginal injection, or in making an examination. It seems to me needless to completely close the vulva, and it also seems possible that such closure hinders the escape of the lochia. But be this as it may; if the vulva is carefully washed twice a day with an antiseptic solution, and if napkins, that have been wrung out of a 1 to 2000 corrosive sublimate solution, are applied over it, changing them more or less frequently according to the amount of the flow, he thinks as good results can be had as by using the antiseptic pad. Moreover, it seemed to him doubtful whether antiseptic pads, though they have proved very useful in maternities, will be readily accepted in private practice, especially in the country. In regard to the results in hospital practice from the use of antiseptics, he has no doubt of their value, and should insist upon their employment. So, too, in private practice he has used them, and

has for some years, but it is only comparatively recently that he has learned how they should be used.

Dr. Parvin objects to the glass tubes for intra-uterine injections. Take for example Chamberlain's, and especially that of the late Albert H. Smith, and they will be found too large for use in some cases where injections are required. Then, too, the liability of glass to break is to him a conclusive argument against the introduction of an instrument made of this material into the uterus or into the vagina. The best instrument, he believes, is Bozeman's catheter. Formerly it was his custom to wait, in cases of septic infection, until the flow was offensive, and then at first to endeavor to correct the condition by vaginal, before resorting to uterine injections. He now knows that is wrong, for the patient may perish or have a protracted illness and then make but partial recovery without the lochia at any time having an offensive odor. Within a year he has seen in hospital practice and in consultation eight cases of septic infection where the happiest results were promptly had from antiseptic solutions injected into the uterus. Most, if not all, of these patients would probably have recovered without these injections, but their recovery, judging from similar cases, previously observed by him, would have been slow, possibly imperfect, and after a more or less prolonged period of suffering upon their part, and of anxiety on the part of the practitioner. We have in antiseptic uterine injections the essential, and the almost invariably successful, treatment of puerperal septicæmia, if this treatment be begun soon enough and properly carried out.

Dr. Barton inquired if the antiseptic pad was applied dry or moist.

Dr. T. M. Drysdale, while conceding the importance of antiseptic precautions in hospital, thought the advantage of these methods in private practice more difficult to prove. Until he relinquished obstetric practice, in 1874, he had met with but five cases of puerperal fever in over two thousand deliveries, and in none of these women were any antiseptic precautions used, other than cleanliness, as they were not then known.

Dr. Longaker believes, with Dr. Hirst, in the great utility of intra uterine post partum medication. Dr. Hirst has neglected to notice an agent in which he, Dr. Longaker, has the greatest confidence: iodoform, as used by Ehrendorfer, of Vienna, in the form of 100-grain pencils. One of these is introduced into the cavity of the womb after irrigation; it dissolves very slowly and continues to medicate the entire utero-vaginal canal for forty-eight or seventy two hours. In removing shreds of membrane, after labor at term or after an incomplete abortion, he uses the finger and prefers it to any form of curette he has used. Theoretically he would prefer a glass tube for intra uterine irrigation, chiefly for the reason that it is more easily cleansed and kept clean. Hitherto he has always used the Bozeman canula, the only objection to which is the difficulty of cleansing, and hence a possible danger of carrying sepsis from one case to another.

Dr. Baer emphatically endorses what has been said in favor of Bozeman's tube for intra-utering irrigation, and against the glass tube. The return current is sure, and the small size of the instrument, as compared with the glass tube, renders the introduction easy and safe.

Regarding the pad exhibited by Dr. Hirst, if he believed the theory that the atmosphere is constantly impregnated with germs which poison whenever they come in contact with open vessels, I would certainly advocate the use of an impervious covering for the vaginal orifice. For the theory teaches that where there is no contact with the air there can be no sepsis. But he does not believe this fully. Therefore he thinks it safer to place the napkin under, and not over, the vulva, so as to permit as perfect drainage as possible, thereby giving free exit to the lochia by making of the vagina a drainage tube, its natural function after parturition.

Dr. Hirst remarked that the pads were used dry by Dr. Richardson, and moist by Garrigues.

LABOR COMPLICATED BY LARGE HARD HEADS.

Dr. M. Price was called to this patient three weeks before her delivery. She informed him that she was in labor and that her time had expired. Examination showed the cervix but little dilated, the os not being larger than a silver quarter. There was quite a discharge from the vagina. The pains were at short intervals and were unquestionably labor pains. The woman was in good condition and he had no doubt that labor would go on. He left, giving instructions to send for him if the pains increased, and if not sent for he would call next day. He had attended this woman in two previous pregnancies, both children being large and the labors tedious, so he anticipated that this one would be a slow labor. The next day the pains were less than on the previous day, and there was no change in the cervix. He did not hear again from her for three weeks, when the husband called and stated that his wife had been in labor all night and all day. He now found the cervix wide open, but the presenting part so high up that he was not able to say what part was presenting. Passing the entire hand into the vagina, he found a vertex 2nd, but the head would not engage. After waiting two hours he found the head had been pushed to the side of the pelvic inlet, with the occiput resting on one side and the neck and shoulders on the other, and determined to ascertain the difficulty. He pushed his hand up into the womb, and had no difficulty in bringing the head back to its first position, but found that it was completely ossified. There was no pulsation in the cord that he could detect, and he at once decided to deliver by turning, as he thought he could deliver the child in that way sooner than in any other. He at once secured the feet and soon had the body and arms delivered. The forceps were applied to the after-coming head, and it was delivered after quite a pull at the superior strait, but with ease through the soft parts without the instruments. There was no injury to the mother and she made a rapid recovery. The child was still-born. Its head measured sixteen inches in occipito frontal circumference.

There can be no doubt that the mother's pelvis is much above the average size, as a head perfectly ossified could not have passed through a pelvis of less than sixteen and one-half inches, as the soft parts would take up at least one-half inch. Standard authorities give the circumference of the female pelvis at the inlet at from thirteen to thirteen and one-half inches.

DR. JOSEPH PRICE read a paper on

ABDOMINAL SECTIONS.

In reporting a mixed group of cases treated by those methods of which Mr. Tait has been the first and chief advocate, I desire to make brief reference to Dr. T. Gaillard Thomas's article on "Laparatomy as a Diagnostic Resource," published in the *Medical News*, Dec. 11, 1886. Therein Dr. Thomas expresses in full Mr. Tait's views. They are simply without the mention of Mr. Tait's name, an embodiment of the views given vent to by Mr. Tait while on a visit to America in the autumn of 1884. Dr. Thomas would select the text of Mr. Tait's law, his own axiom, as a motto for the walls of a hospital devoted to abdominal surgery. "When a doubt, as to the diagnosis of an abdominal neoplasm of a serious character, or of certain obscure pathological conditions of the abdominal cavity which threaten life, exists, give the patient the benefit of explorative incision." Mr. Tait, in like clean and terse English, expressed the same view in a clinical lecture at the Hospital of the Jefferson Medical College, Sept. 15, 1884, when he said "My experience teaches me that it is a surgical crime to allow a patient to go to her grave without operation where it offers a possibility of relief." Dr. Thomas, with great frankness, reports five cases as examples of the class in which he had to regret non interference on his part: cases in which "we" or "I" decided againt operation—the patients died. Further he says: "I regret to say that I could more than double the cases illustrating this part of my paper. Few such cases occur to me now for the very reason that I am a strong advocate for explora tive incision as a diagnostic resource." As to another class of cases in which Dr. Thomas meets with happy results, he reports as follows: "There is a class of cases in which, in my hands, explorative incision has yielded such brilliant results that I shall devote full consideration to it; I allude to cases of ascites in the female." Mr. Tait, in the address I have referred to, gave as as example in point a case operated upon four years previous. "The patient, a young lady, had an enormously enlarged abdomen due to ascites, a fact I had recognized. I opened it by incision for exploration and drainage: by this means the fluid is evacuated just as well as with the trocar, but you cannot feel anything with a trocar; but with a clean cut of two or three inches you can introduce one or two fingers and find out the actual condition of the pelvic organs as you can in no other way." The pioneer work done by Mr. Tait, his influence in exploratory work and treatment of diseased conditions of the tubes, is referred to by Mr. Greig Smith in a very fair and generous spirit. "Tait's name is mainly connected with inflammatory diseases of the tubes, and his influence has been strongly felt in the substitution of operation for actual disease as against vague nerve symptoms." I am strongly of the opinion that an incision which admits only two fingers and not the whole hand is a sufficient incision. Dependence upon fingers skilled in manipulation will serve best, and effectively guard against danger in any pelvic operations. Herein I differ from Dr. Thomas, who urges: "Make an incision which will admit the whole hand; one which will admit two fingers only is hardly warrantable." There is great danger in multitude of fingers of irritating the bowels with the hand and further running great risk by exposure.

Many fatal results attend men beginning the study and practice of surgery of the abdomen. This is illustrated by the statement of an abdominal surgeon: "I do not count my first thirteen cases, because I was learning how to do it." In this there was considerable Rip Van Winkle arithmetic: "We won't count this one." The present good results in the hands of young surgeons must not be attributed to the taking advantage of all the so called "latest antiseptic improvements." In this relation I will make brief allusion to an experience with well trained young surgeons, six in number, doing nine pelvic operations due to inflammatory trouble, suppurating, adherent, and matted together pelvic viscera. The operations were all completed, with but one death, notwithstanding they were all bad cases.

In illustration I present a specimen of *Pyosalpinx* removed by Dr. Thomas G. Morton. This patient had an enormously enlarged abdomen. She had been seen by a prominent gynecologist who had plainly stated that there was no ovarian trouble and recommended tapping, which was done. It is my impression that by the first tapping the large cyst was ruptured, the dropsical accumulation followed. Dr. Morton found upon examination, after repeating the tapping, (the patient refusing any other operation) a small tumor or collapsed cyst. He refused to repeat the tapping and urged section. He kindly asked me to see the patient. Upon examination I was fully satisfied of the correctness of Dr. Morton's diagnosis and agreed with him in urging section. It was immediately done. Extensive adhesions had developed from the tappings, free hæmorrhage followed. He removed a large collapsed cyst, and by irrigation large quantities of old clot. An interesting feature of the case was the existence of two pedicles, the pelvic, and a fan-shaped one over the diaphragm and stomach. The case presented very interesting and instructive features.—Result: cure.

PYOSALPINX.

Ella DeLacy, white, æt. 18 years, on October 31, 1883, presented herself at the Philadelphia Dispensary complaining of attacks of free bleeding and of pain in the left groin and left sub-mammary region, intensified by locomotion. On examination the uterus was found low down and retroverted, the left ovary was tender. On June 16, 1885, vulvo vaginal gland enlarged and tender: abscess incised and packed. On July 1, 1885, she complained of pain in

the back, left shoulder and left inguinal region. She was put on general treatment. Menstruation was normal Nov. 9, 1885. Examination showed the uterus retroverted and the ovaries tender, vulvo-vaginal glands enlarged; abscess incised and packed. Nov. 25, 1885. The uterus had been treated for its displacement and at this time was found in good position. Both ovaries were enlarged and tender. Feb. 24, 1886. Complained of pain on coition. January 25, 1887. Pain in right inguinal region. On examination there were found tortuous, cystic, boggy masses, filling up the whole right side of the pelvis. January 26, 1887. Dr. Price opened the abdomen in the median line, the incision being enlarged to three and a half inches on account of deep adhesions to all of the pelvic viscera. The right tube charged with pus and the right ovary with a parovarian cyst as large as a cricket-ball, were removed, the pedicle ligated with silk and dropped. Free irrigation was employed; the wound was closed with silk.

PYOSALPINX.

Reported for T. S. K. Morton, M.D.

Mrs. S., white, æt. 36, complains of pain in right illiac region and extending down the right thigh increased by locomotion. General condition bad. Dissipated. *Examination.* Uterus in good position; to the right of cervix is a firm pedunculated tumor filling up the pelvic cavity on that side, firm, nodular and adherent. *Operation*, Jan. 25, 1887. A two inch incision was made two inches above the pubis, two fingers were introduced and everything found practically normal except the right ovary and fallopian tube. The ovary was as large as a pigeon's egg and firmly bound down in every direction and apparently more cystic than normal. The tube was likewise bound down, extremely thickened and contained fluid. After carefully examining all around the adherent mass, a point more friable than the other adhesions was found and torn up. This done the enucleation became a matter of patience and application of judicious force until the whole mass had been shelled from its inflammatory bed. When thus freed, the ovary and tube were brought out of the wound and the pedicle doubly ligated as near the uterine cornu as possible and divided with scissors. Previous to dropping back the pedicle the remainder of the fallopian canal in it was thoroughly swabbed out with strong bichloride solution, 18 grs. to ℥j. Scarcely any oozing took place and after thoroughly irrigating with water that had been boiled, and carefully sponging the peritoneal cavity was found to be perfectly dry. The incision was closed without a drain. Time, 55 minutes. *Progress.* Occasional slight nausea was the only untoward symptom following the operation; evening temperature, 99 4°; next morning, 100°. After that it did not rise until the evening of the fourth day, when it mounted to 102° and she complained of considerable abdominal pain with much vomiting. This set-back had come on as a result of getting up and walking about the room some hours before during the absence of her nurse. The fifth day found her with marked symptoms of peritonitis, vomiting, and towards evening shock and evidently dying. Death occurred during the night.

Autopsy.—Parietal wound in good condition; about half-a-pint of cloudy serous fluid in the peritoneal cavity: abdominal contents matted everywhere with very recent lymph; no blood or clots; kidneys somewhat granular, but not nearly so much so as might have been expected from her dissipated manner of living; other organs practically normal.

OVARIAN CYST SIMULATING ECTOPIC GESTATION.

Reported for Dr. F. A. Packard.

Kate Taggaronni, white, æt. 29, married the second time about two years ago. Had five children, all by the first husband; no miscarriages, labors all easy and natural, made good recoveries and nursed all her children. Menstruation regular in time and quantity until November, 1886, when they were absent in November and December.

For the past month she had been bleeding freely, the hæmorrhages appearing in clots mixed with what seemed to be shreds of decidua. The breasts tingle but are not apparently enlarged; face blotchy; no abdominal enlargement noticed. She has had nothing like labor pains. The discharge is of bad odor. She has had no fever or chills. *Examination* showed a cystic tumor, in the pelvis to right of the uterus, about the size of gravid uterus of second month. *Operation.* On January 10, the patient being etherized, an incision three inches in length was made in the median line of the abdomen just above the pubis. Hæmorrhage from the abdominal wound was slight. A small cyst of the right ovary was found consisting of two chambers, one being filled with clear serous, the other with darker blood-stained fluid. There was no adhesions. The cyst was removed unruptured; the pedicle ligated with silk and returned. The cyst was about the size of a small orange and sprang from the right ovary. The patient's condition after the operation was excellent. She had no rise of temperature or pulse, and no pain. Four stitches were removed on the fifth day and the remainder on the seventh day. There has been no return of the bleeding.

ABDOMINAL SECTION FOR INTESTINAL PERFORATION.

Reported for Dr. Francis L. Haynes.

Mrs. M., æt. 20, nullipara, had suffered for nearly a year from diarrhœa, cough with purulent expectoration, and symptoms produced by uterine disease and general weakness. March 9, 1887, she was suddenly seized with severe abdominal pain, which shortly became intense in a spot two inches to the right of the median line and three inches above Poupart's ligament. The temperature varied from 100° to 104°; pulse from 120 to 140. Vomiting and purging and slight balooning were other symptoms. The attending physicians, R. and F. L. Haynes, diagnosticated perionitis from intestinal perforation. As the patient gradually became worse, Dr. Jas. Price made abdominal section on March 14. The intestines were found matted together. They were washed and wiped with sponges. Two pieces of fecal matter, each about the size of a pea, together with some serum were removed from the cavity. The abdom-

inal pain and swelling now diminished and by the third day after the section had entirely disappeared. The temperature gradually sank to normal. On the seventh day the patient became delirous, collapsed and died on the morning of the eighth day after the section. No autopsy was allowed. It was thought that general tuberculosis was the cause of death.

(*To be concluded.*)

FOREIGN CORRESPONDENCE

SURGEONS AND SURGERY IN LONDON.[1]

St. Thomas's Hospital—Strangulated Hernia—Mr. Malcolm Morris—Mr. Pearce Gould—Mr. Timothy Holmes—Suppurative Inflammation of Shoulder Joint—Destructive Inflammation of Foot in Diabetes; amputation—Sir William MacCormac—Guy's Hospital; Its Museum—Congenital Hydrocele of the Cord—Mr. Thomas Bryant—Epithelioma of the Hands.

Dear Dr. Fenger:—A visit to St. Thomas's Hospital afforded me an opportunity to witness an operation for strangulated inguinal hernia by Mr. Sidney Jones, Senior Surgeon of the Hospital and Professor of Surgery in the school in affiliation with this institution. Full antiseptic precautions were observed, including the now almost obsolete spray. The patient, a man about 40 years of age, claimed that he was never aware that he had a hernia until the evening before, when a swelling formed rapidly in the right groin, followed by symptoms indicative of a strangulated hernia. When admitted into the hospital the lesion was readily recognized as a strangulated hernia and several gentle attempts were made to reduce it by taxis, but without success. The tumor was nearly as large as a fist and very tense. A long incision was made down to the sac and all hæmorrhage carefully arrested before the peritoneal covering was laid open. On opening the sac a large mass of omentum came into view, underneath which a loop of intestine intensely congested was found. The omentum was divided into four parts just below external ring, tied with catgut, and the portion below the ligatures cut off and the stump returned. The internal ring was divided in the usual manner, the loop of intestine drawn forward, examined and returned. At this stage of the operation it was evident that internal hæmorrhage was taking place as arterial blood escaped from the empty canal. A search for the omentum through the opening proved fruitless and it became necessary to lay open the entire inguinal canal, but even this extensive enlargement of the wound did not afford access to the retracted omentum, and the abdominal wall was incised for at least three inches more, when the omental stump was found and brought into the wound. One of the ligatures had slipped and caused free arterial hæmorrhage. The hæmorrhage was arrested by the application of another catgut ligature and the stump again reduced. The neck of the sac was tied and stitched into the wound. The extensive wound was closed with deep sutures including the peritoneum, drained and a dressing of iodoform gauze and cotton applied. This hospital is one of the best in London, contains 600 beds, which furnish the material for clinical instruction for the students attending the school connected with this institution.

A visit to the residence of Mr. Morris afforded me an opportunity to examine an excellent collection of renal calculi removed by nephro-lithotomy. Mr. Morris is a young surgeon of great promise, who has had an unusually large number of cases of renal surgery. He is one of the surgeons to the Middlesex hospital and enjoys a good reputation at home and abroad.

A call upon Mr. Pearce Gould, who lives in the same part of the city, was remunerated by a profitable conversation touching upon recent topics in surgery. Mr. Gould is a thorough scholar and an able surgeon, and has done excellent work in the Middlesex hospital.

At St. George's hospital, I made the acquaintance of Mr. Timothy Holmes, the author of a voluminous, and I might say the best, English text-book on surgery. Although advanced in years he still retains his youthful energies and continues his work of giving regular clinical instruction. A female, 20 years of age, suffering from a suppurative inflammation of the shoulder joint, furnished the subject of his clinical lecture on this occasion. A contracted, fistulous tract commencing at the lower margin of the pectoralis major communicated with the shoulder joint. The joint was laid open by a straight anterior incision, and after severing numerous adhesions the upper extremity of the humerus was brought into the wound and the bone divided with an amputation saw just below the tuberosities. Parts of the capsule were removed with curved scissors and a drain introduced through the fistulous tract which had been previously scraped out and dilated. The dressing consisted of a thick compress of antiseptic guaze. He said nothing about the pathology of the case but made the assertion that in such instances it is superfluous to make the operation subperitoneal as such a procedure would be of doubtful advantage, but in case it became necessary to divide the bone at a lower level the periosteum should be preserved. The best functional results he has seen after excision of the shoulder-joint were patients who could raise the arm to a horizontal position.

When Mr. Holmes finished his remarks Mr. Hayward took his place and presented a diabetic patient who had recently become the subject of a destructive inflammation of one of his feet, which had terminated in extensive sloughing which had opened the ankle joint. Amputation was performed at the junction of the middle with the upper third of the leg, by making a long anterior and short posterior flap. The periosteal flap was made, and the flaps were sutured in the ordinary manner and a transverse drain introduced. A gauze dressing was applied. In this connection I will give you the result of a conversation with Professor Koenig a few days ago, concerning the propriety of resorting to amputation in diabetic patients suffering from gangrenous inflammation of an extremity. He stated that while

[1] By permission of Drs. Fenger and Senn.

it had been customary heretofore to resort to preparatory treatment prior to amputation, with a view of diminishing the sugar in the urine, he had during the last year operated upon several cases where the patients had high temperature and the urine contained large quantities of sugar, with the result that almost immediately after the operation the temperature became normal and the specific gravity of the urine less. The result of these observations has convinced him of the fact that it is dangerous to delay the operation whenever the local symptoms indicate the necessity for such a procedure in diabetic patients. In corroboration of this statement it may be said that quite recently a French chemist has shown that the introduction of septic material into the blood produces an artificial diabetes which disappears as soon as the septic condition subsides.

A third operation was performed by Mr. Dent. The case had been diagnosticated as lipoma, but during the dissection the cyst ruptured and the escape of other omatous material showed the fallacy of the diagnosis and proved that the swelling was not a tumor but a retention cyst. I have every reason to believe that in many of these large metropolitan hospitals the diagnostic resources are not always exhausted prior to the operations, and that often the true nature of the case is only revealed during the course of the operation. Many of the most prominent surgeons are not exempt from this fault. The greatness of a surgeon should never be measured by the brilliancy of his operations but by the knowledge and care he exercises in rendering a correct diagnosis upon an anatomico-pathological basis.

The pleasure of my visit in London reached its maximum at a dinner with Sir William MacCormac, at the Reform Club. On this occasion I met the house surgeons of St. Thomas's hospital, and Mr. Trimmer, Secretary of the College of Surgeons. I shall always cherish the recollections of that evening as a bright and verdant oasis of a laborious professional life. The last day of the week I spent in London I devoted to a visit to Guy's hospital. One of the great attractions of this institution is the anatomical and pathological specimens, modeled in wax by the skillful hands of Mr. Thomas Town, who spent nearly half a century of his useful life in their preparation. Hundreds of specimens, as natural as life itself, can be found here illustrating normal anatomy and pathological specimens. I know of no better anatomical school than the museum of Guy's Hospital, where, upon long tables under glass covers, the most beautiful models, taken from actual dissection, illustrate every organ and every region. The students appear to take advantage of this opportunity to master their anatomy, as quite a number were seated in front of the specimens with Gray's Anatomy in their hands. The models illustrating pathological specimens show the tissue changes much better than the original specimens. In the afternoon Mr. Davies-Colley operated upon a case of congenital hydrocele of the cord in a boy 8 years of age. The testicle could be distinctly isolated from the swelling, and there was reason to believe that the communication with the peritoneal cavity was a small opening. During the delicate dissection made with a view of extirpating the sac, it was found very difficult to isolate the cord, and the tunica vaginalis was opened at a small point corresponding to the upper surface of the testicle. The neck of the sac was ligated, and subsequent examination of the specimen proved the correctness of the diagnosis. The operation was performed under a spray and a Lister dressing was applied.

On a previous occasion I had made the acquaintance of Mr. Thomas Bryant, the author of the familiar text-book on surgery, and at this time I had an opportunity to hear him lecture and see him use the knife. From a practical point of view his clinic was unimportant, but exceedingly interesting from a pathological standpoint. The patient was an old gentlemen who had been suffering from a papilloma upon the dorsum of one of his hands for twenty years. For the last two years the tumor increased quite rapidly in size and the surface ulcerated, features which led Mr. Bryant to the belief that the benign papilloma had undergone transformation into a sarcoma. To me it appeared that the transformation had taken place in the epithelial covering, and that the tumor was not a sarcoma, but a squamous epithelioma; an opinion in which I was confirmed in my own mind by a macroscopical examination of a section of the tumor, where the cylindrical cords from the surface of the tumor towards its centre could be distinctly recognized. Mr. Bryant's favorite antiseptic solution is a weak watery solution of iodine, which he prefers to any other antiseptic, and with which he has had most excellent results. In my next letter I hope to give an account of my observations gathered from the two most noted European laparotomists, Tait and Péan.

N. Senn.

DOMESTIC CORRESPONDENCE

GALVANIC MEASUREMENT.

Dear Sir:—In a few of your recent numbers, not only have I been the subject of criticism for my advocacy of strong currents of electricity in the treatment of fibroid tumors of the uterus, but the technical correctness of some of my statements has been questioned. In regard to the first I think I will be able to justify myself, while the latter simply requires an explanation.

In order for one uninitiated to understand how it is possible to employ, without disastrous results, a current of electricity of as great intensity as that recommended by Dr. Apostoli, or as recommended in my article in The Journal of April 4, it is necessary that he be made familiar with the following points: 1. The toleration of the particular tissues traversed by the current; 2, the end sought by the operation; 3, the principles of the electrodes; 4, kind of current and method of appliance; 5, the electro-motor force of the current.

The maximum strength of current recommended in ordinary cases (from 200 milliampères upwards),

is only employed in the needle operation and for the purpose of checking alarming hæmorrhage from the cavity of the uterus. As the latter constitutes one of the most alarming, and very often the only grave symptom of this distressing malady, we are frequently consulted for that difficulty alone. The end sought in the treatment of such a case is to seal up the blood-vessels that are discharging their contents into the uterine cavity. This effect is accomplished not only as may sometimes be temporarily done by an actual or galvano-cautery, or strong acid, or caustic alkali, or the curette, but also because it produces a similar though less destructive effect upon the deeper tissues as the current passes through them. The internal electrode that is employed in a case in which this result is sought is of platinum, and has an active surface in contact with the tissues to be affected of from 4 to 8 square centimetres. From this small surface the current radiates, as from the centre of a sphere, to a large portion of its circumference, which is represented by a large, concave, abdominal electrode, which is arranged to conduct equally from its entire surface. This external electrode may have a conducting surface varying from 400 to 800 square cm. The portion of the patient, then, that the electricity traverses might be represented by an inverted cone, the apex of which is at the internal electrode, with a surface of from 4 to 8 sq. cm., the base corresponding to the external electrode, with a surface of 400 to 800 sq. cm. If we should remove this cone of tissue and analyze it in many cases of fibroid tumors of a hæmorrhagic nature operated upon, we would find about one fourth of the cone from its apex toward its base composed of hard, unsensitive muscular tissue of the uterus, two thirds of the remainder of unimpressionable myoma, while the base would be composed of the most sensitive tissues of the mass—the abdominal wall and its integument.

The enormous current of electricity that this cone of tissue will tolerate, without injury to innocent parts, is what I have been criticised for advocating. The effect which is necessary for us to accomplish in this cone of tissue in order to effectually check hæmorrhage from its apex, or the internal surface of the uterus, is as follows: At the apex, where the powerful current is concentrated on a surface of from 4 to 8 sq. cm., we seek mild cauterization; as the current reaches the tissues immediately beneath the surface, and is not quite so concentrated, we want strong coagulation without positive destruction; as the current still further radiates we get milder coagulation, then strong electrolytic action, then milder electrolytic action; and when the more sensitive tissues of the surface are reached, the current is so thoroughly diffused that nothing more than a smart burning sensation is produced, and a temporary reddening of the skin. The strength of current in milliampères that will accomplish this effect is directly proportionate to the conducting surface of the internal electrode. For instance, if the conducting surface of the internal electrode is 1 sq. cm., and a definite effect is obtained, with a 100-milliampère current it will require just double that strength of current to produce the same effect if that surface is increased to 2 sq. cm.

While the density of the current is dependent upon the size and character of the electrodes, the pain produced in conducting a current through a tissue is also dependent, to a great extent, upon their character and position. With a small active electrode, internally applied, where the tissues are not sensitive, and a dense and high-tensioned current is not only tolerated, but necessary, the external abdominal or surface electrode must be of such a character that it will accomplish the greatest possible diffusibility, and possess the maximum conductivity consistent with little pain. The electrodes by which I make this possible were described in an article in THE JOURNAL of April 23, 1887.

It is not a difficult matter to understand that a painful and disastrous result would ensue if, instead of the large surface electrode externally applied, a small, highly conducting electrode should be substituted. In such a case, of course, the same effect would be produced upon the sensitive external tissue that we expect internally (cauterization and coagulation), because of the condensation of a strong current, that was just tolerated when diffused over a surface of from 400 to 800 sq. cm., to a surface of very much smaller dimensions.

Again, while it is necessary to have proper electrodes to prevent destructive and painful effects, it is also necessary to have a steady and uninterrupted current. If it is even and continuous, a much stronger current will be tolerated than when it is uneven and interrupted. The mechanical effect of an interrupted current of 25 milliampères strength through the abdominal walls could not be tolerated for a moment without the most excruciating pain, while a smooth and uninterrupted current of 300-milliampère strength, properly applied through the same tissues, is often received without a complaint.

For the same reason, the greatest precaution must be exercised in turning on the current, to see that it is done gradually. A much stronger current will be tolerated without discomfort if it is increased in strength a cell at a time than if the full force of the battery is switched on at once.

In estimating, then, the effect of a strong current of electricity upon a body, it is of the greatest importance to take into consideration: 1, the toleration of the particular tissues traversed by the current; 2, the end sought by the operation; 3, the density of the current and the principles of the electrode; 4, kind of current and method of appliance; 5, the electro-motive force of the current. The bearing the electro-motive force has in the case will be referred to shortly.

If the above points are thoroughly borne in mind, it seems to me even the most uninitiated can appreciate how utterly void of value the example cited by Dr. Engelmann in his last letter, in support of his opinion in regard to the point at issue between us, is. "Ten ampères," he says, "is the current used in the large electric lamps upon our streets. . . . . If an unfortunate fireman comes in contact with such a current for a moment he is struck dead! The fatal shock is caused by about one-tenth of an ampère, 100 milliampères, through the high resistance of the

human body." If this is a conclusive argument, or any argument at all, why 10 ampères cannot be used in the method I have described, why is it not as conclusive an argument against the use of 280 milliampères, which Dr. Engelmann maintained in his letter of April 11 that he himself had used? The argument is still further confused by the following statement: "The current used for the Brush Electric Light is about 10 amperès; if this is sent through the human body (the part of the body is not mentioned) which, with the dry skin, represents a resistance of 30,000 ohms, roughly estimated, one-tenth of an ampère (100 milliampères), strange as it may seem, would be the actual current passing through and causing the fatal stroke!" If we analyze the above statement we will not only see that it is without value as an argument against strong currents properly used, because it is in no way a parallel case; but we will also find that the conclusions are not necessarily correct.

It is not a parallel case because, first, the part of the body through which the current passes, in the case of the "unfortunate fireman," cannot possibly have the toleration that is possessed by the cone of tissue I have described. Presumably, in the case of the fireman, the current traverses the body from hand to hand. Here, instead of a solid section of tissue, two thirds of which is made up of pathological tissue and involuntary muscular fibres, the combined resistance of which may be as low as 50 ohms, we have the sensitive voluntary muscles of the arms and shoulders, with their sensory nerves, the lower cervical and upper dorsal spinal cord, the accompanying vaso motor ganglia of the region, the vagus and other important nerves, and the enormous resistance of 30,000 ohms.

2. In the operation I have described, by the use of the peculiar electrodes I have adopted, it is possible to use a much more powerful current, because it is widely diffused where it comes in contact with the more sensitive tissues, while, in the case of "the unfortunate fireman," the current enters the body in the most concentrated form, from the small section of a highly conducting metal wire.

3. I have endeavored to point out how necessary it is for us to have a steady and uninterrupted current, the necessity of increasing its strength very gradually, so as to produce no shock. In the case of "the unfortunate fireman," as he severs the wire, the whole force of an electric light system with an electro motor force of from 1,000 to 40,000 volts, is instantly flashed through the most sensitive part of his body.

4. The volt-force necessary to get a current of 100 milliampères through the tissues of the abdomen and fibroid tumor by the method I have described, if we allow that the resistance of the tissue between the electrodes is 60 ohms, the resistance of electrodes, conducting wires, galvanometer and battery at 200 ohms, will be not more than 26 volts; while the electro-motive force of the current that passes through "the unfortunate fireman," at the lowest estimate, if it overcomes 30,000 ohms, is 10,000 volts. Surely, can a current of 10,000 volt force be used with fairness to demonstrate that 100 milliampères is unsafe, where the resistance is so small that only 26 volts are necessary to give the same current?

5. Then, after all, if Dr. Engelmann's illustration should be considered of any value—and I think that I have demonstrated why it should not—his conclusion that death necessarily follows such a shock is not well grounded. While, occasionally, a death is reported from severing electric light wire, a number of well authenticated cases can be cited to each one of these, where the shock from the same cause produced but temporary inconvenience.

Dr. Massey, of Philadelphia, in his letter of May 14 on this line, after figuring the power of my battery to a maximum current of 40 or 50 milliampères, says: "But even 40 or 50 milliampères really used by Dr. Martin are strong doses, when applied to the delicate lining membrane of the uterus, or concentrated at a single point within the tissue." That is just where we are misjudged. If Dr. Massey had read my paper carefully he would have noticed that we *seek* to coagulate or liquefy (as the indications demand) the tissues with which the active pole comes in contact. If he realizes this, he must appreciate that this cannot be accomplished, in the majority of cases, by a 40 or 50-milliampère current.

Finally, in answering the criticisms of Dr. Massey made in his letter of May 14, and the criticism, in the same line, of Mr. H. L. Bailey in his letter of May 28, I wish first to make an explanation: The battery with which I do most of my office work consists of 115 gravity cells. Under ordinary circumstances, this accomplishes all that I require. However, connected with the same switch board I have 36 cells, manufactured by McIntosh & Co., of this city, called "improved gravity cells." Each one of these cells has an electro-motive force of 1.5 volt; these cells added make the combined electro motive force of my office battery 174 volts. Besides this power, which I find ample for all except extraordinary purposes, I have been indebted to Dr. McIntosh for additional apparatus whenever I have, for experimental purposes, found it necessary. I made this explanation, as I have no desire to mislead my readers, or to pose as a violator of Ohm's Law. However, from my 115 gravity cells I am able to get, and do get, a current of from 300 to 600 milliampères. The internal resistance of the battery is 230 ohms, instead of 1,150, as figured by Dr. Massey; the resistance of the tissues and electrodes is not more than 150 ohms. The electro-motive force of the battery is about 130 volts. By Ohm's Law we get $\frac{E}{R} = \frac{130}{380} = C = .342 +$, or 342 milliampères. If the resistance is less, as is often the case, the current will be correspondingly higher. By switching in my additional cells, representing 54 volts, I increase the current to 400 or 800 milliampères.

I wish to correct any impression, however, that I am using a current, at any time, that cannot be readily borne by a patient unanæsthetized. The current is turned on a cell at a time, with great care, until the required strength is reached. If the electrodes become painful before the required current is obtained, it must be carefully turned off and the elec-

trodes changed or rearranged, so that the required current may be obtained without pain. The greatest care must always be observed in the selection of electrodes and the proper manipulation of the current. Yours truly,

FRANKLIN H. MARTIN, M.D.

163 State St., Chicago, May 30, 1887.

BOOK REVIEWS.

MEDICAL ELECTRICITY. A Practical Treatise on the Applications of Electricity to Medicine and Surgery. By ROBERTS BARTHOLOW, A.M., M.D., LL.D., etc. Third Edition, Enlarged and Improved. With Illustrations. 8vo, pp. 304. Philadelphia: Lea Brothers & Co. Chicago: A. C. McClurg & Co.

This book, in its preceding editions, has been before the public long enough to be well known. All the works written by Professor Bartholow are deservedly popular, for they are clearly and well written. The present volume covers the usual ground gone over by treatises on this subject. Electricity, its nature and modes of manifestation, are first considered; then the means of generating it; later electro physiology, or its physiological action; and finally its use as a diagnostic and therapeutic agent. The additions to this edition have been chiefly to the sections on therapeutics. The portions devoted to electric illumination and galvano-cautery have been enlarged. Galvano-faradization and electric baths are also described. Without doubt this edition will maintain the popularity of the work.

MISCELLANEOUS.

NEW HAMPSHIRE STATE MEDICAL SOCIETY.—The ninety-seventh annual meeting of this Society will convene in the Opera House, North Main Street, Concord, N. H., Tuesday, June 21, 1887, at 11 o'clock A.M. The Councillors will meet in the office of Dr. Conn at 8:30 P.M. of the previous evening, June 20. Prof. Carlton P. Frost, Hanover, President; Dr. G. P. Conn, Secretary.

STATISTICS OF TYPHOID FEVER.—In an Amsterdam graduation thesis, by DR. M. NIEMEIJER, on the Statistics of Typhoid Fever, out of fifty cases in which complete observations were recorded, prodromata occurred in twenty five, rigors in sixteen, "cold shivering in one, pain in the left side in seven, diarrhœa in forty two, splenic enlargement in forty-eight, rash in forty seven, ileo cæcal gurgling in nineteen, and pain in the same region in twenty, bronchial catarrh in forty-three, albuminuria in twelve, in three of which cystitis followed. In sixty-three cases, relapses occurred six times. With regard to complications, out of seventy-three cases, intestinal hæmorrhage occurred in five; peritonitis in three, perforation occurring in two of these. Other complications were: pharyngitis, one; acute follicular sore-throat, one; parotitis, one; epistaxis, three; laryngeal perichondritis, one; pulmonary infiltration, thirteen; pleurisy with effusion, three; thrombus of the crural vein, one; acute nephritis, one, in a somewhat doubtful case; nephrolithiasis, two; herpes labialis, three; cutaneous hæmorrhage, three; periostitis of the tibia, one; joint-affections, three; meningitis, one; neuralgia of the sole, one; profuse perspiration, two; polyuria, one; mental disturbance, four; deafness, five; bleeding from the ear one. The total number of patients on whom observations were made was 194. Of these, twenty, or 10.3 per cent., died, the male mortality being decidedly higher than that occurring amongst female patients—12.5 per cent., as compared with 6 per cent.—*British Medical Journal*, May 7, 1887.

GASEOUS TREATMENT OF CONSUMPTION.—Dr. Henry Leffmann, Editor of *The Polyclinic*, (P. O. Box 791, Philadelphia), desires to obtain results of the new treatment of Pulmonary Consumption and Phthisis by gaseous enemata, *for publication in The Polyclinic*. The correct therapeutic value of this method can only be arrived at by the collection of statistics, and he therefore requests any one who has administered the gas to communicate the result to him, the formula used, and any special information that may be useful.

ABDOMINAL SECTIONS.—Professor Joseph Eastman, of Indianapolis, Ind., recently reported the results of twenty four cases of abdominal section with twenty recoveries. Four were operated on in the City Hospital, ten in his private hospital, and ten in private residences. In twenty-two of the cases the operations consisted in removal of one or both ovaries, and in fifteen of these, the tubes were included. The operation was exploratory only in one case, revealing encephaloid disease of the left ovarium and adjacent parts; and in the remaining case a fibroid tumor of the uterus was removed, weighing six pounds.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 28, 1887, TO JUNE 3, 1887

Capt. H. O. Perley, Asst. Surgeon, relieved from duty at Ft. Maginnis, M. T., and ordered for temporary duty at Ft. Snelling, Minn. S. O. 49, Dept. Dakota, May 23, 1887.

First Lieut. Wm. N. Suter, Asst. Surgeon (recently appointed), ordered for temporary duty at Washington Bks., D. C. S. O. 122, A. G. O., May 27, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING JUNE 4, 1887.

Bransford, John F., Surgeon, ordered to the Smithsonian Institution, at Washington, D. C.

Tryon, Rufus J., Surgeon, detached from the U. S. Str. "Quinnebaug," and ordered home.

Siegfried, Chas. A., Surgeon, ordered to the U. S. Str. "Quinnebaug."

Martin, Wm., Asst. Surgeon, detached from the U. S. Str. "Pinta," and ordered home.

Fitts, Henry B., P. A. Surgeon, detached from the receiving ship "Vermont," and ordered to the U. S. Str. "Pinta."

Field, James G., Asst. Surgeon, ordered to the receiving ship "Vermont."

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ADDRESS IN MEDICINE.

Delivered before the Section of Practice of Medicine, Materia Medica, and Physiology, at the Thirty-Eighth Annual Meeting of the American Medical Association, at Chicago, June 8, 1887.

BY JOHN S. LYNCH, M. D.,

OF BALTIMORE, MD.

In searching the records of this Association to find how my predecessors have discharged the duties of the position which the partiality of my fellows in the Section on Practice of Medicine, Materia Medica and Physiology has assigned to me, in order that I might profit by their illustrious examples, I find that with rare exceptions, these addresses have not been (what the Association originally intended they should be) a review of the advances and discoveries made during the past year in the branches of medicine in this section; but have consisted of discussions of a single topic which has recently most prominently occupied the attention of the profession. If I should follow the example thus set me I would be greatly puzzled in making the selection of such a topic; for there are really so many subjects of transcendent importance crowding upon our notice, of either one of which so much could be said, that I should finally neither satisfy myself nor the audience I address by the selection I should make. Moreover, as most of these topics would necessarily have to be discussed in a manner more or less speculati e, it occurs to me that few would take any interest in *my* speculations upon any of them. I shall, therefore, as briefly as I can, glance at some of the discoveries, or pretended discoveries, advances, or hoped for advances, in our departments of medical science, not of this year alone, but during the past few years. For while the time of the announcement of a discovery or advance, may constitute an important epoch long enough to be remembered afterwards, it is only after long trial during which the real value of the discovery is to be tested, that we can accept it as of proven and established value.

ANTIPYRETICS.

Unquestionably the means of safely reducing and keeping down morbidly high temperatures constitute the most powerful weapons we possess in combatting a large majority of the diseases to which mankind is heir to. As I grow older and my experience enlarges I become more and more convinced that fever is the lethal agent which destroys life in almost every disease in which that functional derangement is present. Whether in specific diseases or common inflammations it is most frequently the morbid high temperature by its wasting destruction of tissue, the arrest of nutrition and the associated derangements of function that determine the fatal result. Of course in the so called specific fevers it is the sole destructive agency. In consumption (which in temperate climates destroys nearly one-sixth of the population) it is the accompanying fever and its grade which determines the duration of the disease. Ninety cases in a hundred of pulmonary consumption die from asthenia long before the destructive processes going on in the lungs have deprived the patient of a sufficient amount of his respiratory apparatus to destroy his life. He dies not of apnœa but of asthenia. Even in ordinary inflammations it is usually the fever that kills and not the destruction of the organ inflamed; while the fever, although perhaps at first directly caused by the inflammation, reacts upon it, continues and intensifies it. . . .

Until a very few years ago we had but a single agent that could be used sucessfully as an antipyretic, and this was so uncertain and so irritating to the gastric mucous membrane that it often failed us, and still more frequently could not be tolerated in doses sufficiently large to do its work. Indirect antipyretics of great activity we possessed in veratrum viride, aconite and digitalis, but these were too energetically poisonous to be safely used on all occasions. Apyretics—that is medicines which increased heat loss—we had in abundance; but these could not be continued long, for although the nervous system may be protected from the directly injurious effects of heat, by them, they did not arrest the too active combustion going on and the patient died of exhaustion almost as soon as if left alone. We may heap ice on our steam boiler and thus prevent the formation of steam, or perhaps cause its recondensation as soon as formed, but we do not stop the consumption of coal in the furnace underneath. And so, too, we may by bathing, sponging or sweating keep down the temperature of the body externally, but the combustion is still going on internally, not quite so rapidly perhaps, but still at a sufficient rate in protracted fevers to produce final exhaustion and death. What we wanted then was something more certain and effective than quinine, less disagreeable to the stomach, and less injurious to the nervous system, and free from any poisonous effect, that would put out the fire by stopping combustion—an antipyretic.

This most desirable agent has been found in a substance discovered by Knorr, of Erlangen, Germany, which he named antipyrin. Early in November, 1884, I began its use in all diseases attended with fever, and my own estimate of its value may be inferred when I say that since that date I have not seen a single person die of enteric fever, scarlatina or measles, only one of croupous pneumonia (seen too late), and that the duration of cases of phthisis seems to be very nearly doubled. In acute inflammatory rheumatism it seems to be scarcely less efficient than sodium salicylate. The dose should be about one gramme, repeated at first every hour until three doses have been taken, and afterwards every three or four hours. It is very soluble in water, has a slightly pungent and bitterish taste and rarely excites nausea. If it should do so it may be given in lime water or combined with other alkalies.

Another substance belonging to this class of remedies has recently been brought to our attention under the name of acetanilid, and has been sold in some of the shops as antifebrin. From a few observations it has been found to be even more powerful in antipyretic action than antipyrin. It has the advantage of being very much cheaper than the latter, which is unfortunately a patented article; but it has the disadvantage of being entirely insoluble in water and alkaline solutions; and for children, therefore, who cannot swallow pills or capsules it is much more difficult of administration.

CARDIAC STIMULANTS.

During the past year two new cardiac stimulants have been brought to our attention, for one of which the valuable claim was made, that it energized the heart without increasing arterial tension. I have used the substance, which has been called strophantin, but have not been able to realize the valuable properties claimed for it. Spartein sulphate I have used in a single case only, but it produced in my patient such an intense, agonizing headache that I have not ventured to prescribe it a second time. It is hardly possible that we shall ever find a better remedy for all cardiac lesions than digitalis, which combines the two valuable powers of energizing the heart and stimulating the action of the kidneys at the same time.

PHTHISIS.

The etiology, prevention and cure of pulmonary phthisis must always be to us as well as to the people at large a subject of paramount interest. As already stated it is the cause of death throughout the temperate zones of our planet of nearly one-sixth of the population. It destroys more people probably than war, pestilence and famine combined. All the so called zymotic diseases together, including cholera, yellow fever, malarial fever, small pox, diphtheria, scarlatina and measles, do not destroy so many of our race as this deadly foe to human life. If an epidemic of cholera or small pox should break out in your city and produce an annual mortality one half of that produced by consumption alone, public indignation would be aroused against the inefficiency of your health boards, and millions of dollars would be expended in stamping out the pestilence. Yet this terrible pest is silently doing its deadly work but excites no public attention—no public protest against its ravages.

It was sincerely hoped that when Koch announced his discovery of a peculiar microbe in the lungs and sputa of tuberculous patients, and by experiment on some of the lower animals had, as he supposed, established an etiological relation between this microbe and tuberculosis, that one step had been made in advance towards preventing at least, if not curing, this dreadful disease. His discovery was hailed with delight, and his conclusions were accepted without question (and I might add, almost without reason) by a large majority of the ablest and oldest members of the profession. For a long time we heard of scarcely anything but the bacillus tuberculosus and the contagiousness of phthisis. In order to make facts conform to theories, even the able and rational views of Virchow and Niemeyer in regard to the nature of tubercle were discarded, and the older and cruder doctrines of Laennec were revived, that everything is tubercle that has or can undergo the caseous transformation or degeneration. The idea that the bacillus tuberculosis might be the special agent which attacks and destroys dead cellular masses that have undergone the caseous degeneration, whatever may have been their origin; just as the vibrio and its congeners attack pus; the yeast plant saccharine solutions, which in turn, when fermentation ends, is attacked by the bacterium of active fermentation; the oïdium albirans particles of putrefying milk in the mouth of an infant; and the micrococcus the plastic exudations of croup and diphtheria, was scouted by the followers of Koch as absolutely absurd. And yet, more recent and careful experiments seem to show that this is probably the truth, and that the bacillus tuberculosus is only pathogenic when previous pathological changes have produced the conditions favorable for the growth of the microbe, or the animal is placed under such conditions as to invite and cause those pathological changes.

The recent experiments of Dr. Truesdale, of New York, related in a paper read before the Climatological Society at its last meeting in Baltimore, show this, we think, with tolerable clearness. This gentleman took fifteen rabbits, which he divided in three equal groups. Five were inoculated with Koch's bacilli and placed in a damp, dark cellar and insufficiently fed on unwholesome food. They all became sick and died with tubercles. Five others were placed in a damp pit and badly fed, but were not inoculated with tubercle. One of these died and all became sickly. When killed no tubercle bacilli were found, and, as far as he could see, no tubercles. The last five were inoculated with tubercle bacilli and turned out on a rich pasture, with plenty of air and abundant, wholesome food. They remained perfectly healthy, and when killed showed no tubercles or bacilli. Sternberg's experiment several years ago showed virtually the same thing.

Now, what is the rational deduction to be drawn from these facts? That tuberculosis is a contagious

and infectious disease solely, and that the agent of this infection is the bacillus tuberculosis? Surely not, because even rabbits, who are more prone to tuberculosis than any other animal, except, perhaps, their congener, the guinea pig, cannot be infected by inoculation when placed in good hygienic conditions, and sufficiently supplied with wholesome food. But it may be said that other animals not reckoned among those liable to tuberculosis, as the dog and cat, have been infected with inoculations of bacilli. This is true, but in order to accomplish this the microbes must be introduced into a serous membrane, where they excite pain, fever and inflammations, usually attended with cellular exudations, which in turn undergo caseation; so that here, too, they find the conditions favorable to their growth. If tuberculosis is a contagious and infectious disease, it must differ from all other diseases of this class. Every one will take variola, or measles, or scarlatina, when sufficiently exposed, unless protected by vaccination in the one case or previous attacks in the others. Yet comparatively few take the tubercular disease, even in those regions where it is most abounding; and an occasional case occurs in regions where it does not abound, and where infection would seem to be physically impossible. And yet, man is preëminently a tuberculous animal, and far more human creatures die of the disease than of any other animals when left in their natural conditions.

But while denying, as I do, that the bacillus tuberculosis is the sole, or even a frequent etiological factor in initiating tuberculosis, I do not assert that it has no pathogenic significance. I have already expressed my belief that this microbe is the agent which destroys and breaks down matter that has undergone caseation, converting it into a semi-purulent, putrid mass, whose contact with the living tissues around it is sure to set up inflammatory and ulcerative processes, and whose absorption into the blood, with or without the bacillus, will lead to that general degradation and depravation of the circulatory fluid which is sure eventually to lead to certain quasi-inflammatory processes elsewhere of which miliary tuberculosis is a most frequent result, and cellular exudation an invariable one. To a person, therefore, who has had the misfortune to contract a catarrho pneumonia which has left behind it a cellular exudation into the alveoli of the lungs which has undergone the caseous degeneration; or even a so-called scrofulous gland which has undergone the same process, the introduction of the bacillus of Koch will be fraught with the most terrible consequences. That one may carry a caseous mass in his lungs for years, and yet enjoy fairly good health, is well known to all practitioners of long experience. I recall two such cases: In February, 1862, a soldier in the Confederate Army contracted a catarrho pneumonia from which he recovered with a permanent consolidation of the upper lobe of his left lung. Two years ago I had an opportunity to examine this man, and found the induration still there, but his health was fairly good. I have no doubt in the world that the introduction of the bacillus tuberculosis in this man's blood would at once set up pulmonary phthisis. The other was a ship carpenter in Baltimore, who for nineteen years had a complete induration of the lower lobe of his left lung, but still remained in sufficiently good health to follow that laborious occupation. At last, however, the mass began suddenly to break down, and he died in about four months from pulmonary phthisis. The case of this man was particularly interesting and instructive, as showing that the danger from bad hygienic surroundings, and especially from bad air, is even greater than the danger of direct contagion. He married a young woman who was then in good health and remained so for six years. At the end of that time she was attacked with uterine hæmorrhages which made serious inroads upon her health, and finally culminated in an attack of true miliary tuberculosis of the lungs which destroyed her life in about four months. Notwithstanding he occupied the same room and bed with his wife during her illness, he remained in his ordinary health for two and a half years afterwards, when, his business becoming dull, he obtained an appointment in the Maryland oyster navy as common seaman. Two months of sleeping in the fetid atmosphere of the dark, damp forecastle of his vessel brought on the rapid consumption which ended his life. While, then, it cannot be denied that infection may, and probably does set up consumption in those who have suffered either of the accidents I have mentioned (viz.: catarrho-pneumonia and scrofulosis), we must remember, after all, that it is bad hygienic surroundings which cause the pathological lesions which constitute the basis of fully 90 per cent. of all the cases of consumption we meet with, and invites the injurious action of the pathogenic microbe which brings to a fatal termination lesions which might otherwise remain quiescent for many years, and even be not inconsistent with a fair degree of longevity.

Here, then, is a field in which we can work for the good of our common humanity. Let us try to teach our people, in building our cities and towns, to avoid the construction of narrow alleys into which the sunlight never comes; that living in damp cellars and basements, where not only is ventilation impossible, but into which will infallibly gravitate the deadly carbonic dioxides exhaled by men and animals in the neighboring streets, which not only directly poison the nerve centres and produce deficient functional activity of all the glandular organs, but diminish the amount of oxygen inhaled, impairing the aeration of the blood, and thus causing pulmonary stasis which must end in some form of the pneumonic process.

BERGEON'S TREATMENT.

Acting upon the theory of Koch and his followers, that consumption is caused by a microbe in the alveoli of the lungs, numerous plans of treatment which have for their object the destruction of these microbes have been devised. All of these promise some success in the beginning, because it gives the unfortunate a new hope to cling to, and places them in a state of pleased expectancy which for a time buoys them up, and even reacts upon their morbid physiological processes. For no sick person is so hopeful as a consumptive. It is not surprising, therefore, that

these several plans of treatment should be precipitately heralded to the world as most pronounced successes.

The latest of these plans is that proposed by Dr. Bergeon, of France, who, in the latter part of 1886, announced that he was curing consumption by injecting into the lower bowel a mixed gas consisting of sulphuretted hydrogen and carbon dioxide. The theory upon which this treatment is based is that this gas is absorbed through the intestinal mucous membrane and exhaled through the pulmonary surfaces, and, coming in contact with the pathogenic microbes there, destroys them. Dr. Bergeon must have forgotten that these microbes are not found in the alveoli free from disease, and where, if at all, the gas must be exhaled, but in the solid tubercular masses occupying these air sacs, into which the gas can hardly penetrate, and from which no exhalations take place. Even then, admitting that his mixed gases can destroy the microbes, which seems highly improbable, in view of the fact that they are continually exposed to an atmosphere so highly charged with carbonic dioxide that its retention in the lungs for five minutes will produce unconsciousness, it is not clear how they are to reach the objects intended to be destroyed. Accordingly, we find that in other hands the plan has proved to be a wretched failure. As physician to Bayview Asylum (the Baltimore city almshouse) I have given the plan a fair trial in several cases, and I can report nothing in favor of the treatment. One case was, I thought, injuriously affected by it, and died apparently a little sooner than if he had been left alone. While the antiseptic, or rather the aseptic, treatment may have a certain value in surgery and obstetrics, in medicine it must always remain an impossibility. For, admitting all that is claimed as to the agency of microbes in setting up and keeping up disease processes, it must be remembered that they are biologically as high in the plane of life, and if all experiments can be believed, have a higher resisting power than the cells which compose the living elements of our tissues. Any germicide, therefore, which can destroy the one, must inevitably also destroy the other.

In conclusion, I desire to call attention to what I consider to be a vicious custom that has grown up among the chairmen of our Sections. When elected to this position last year at St. Louis, I was surprised to be told that I and the Secretary of the Section were expected to write letters to prominent members of the profession throughout the country requesting and urging them to write papers to be read before the Section; and that it is a common practice pursued by all the chairmen. It occurred to me that by this course I might secure a large number of papers, possibly, but from gentlemen who, wishing to please, would write something under stress, and not because they had anything which they really wished to communicate to the profession. Years ago, when the membership of our Association was small, this practice of inviting contributions may have been necessary; but now, when our membership runs high up in the thousands, these solicitations ought to be unnecessary. There must always be, among the four thousand odd members, a sufficient number who have, or think they have, something which they wish to tell and which is worth hearing. I have therefore ignored the old custom, and have not written a single letter soliciting contributions. The result has been that we have more papers than the Section can possibly read and discuss, and which have the advantage of being entirely spontaneous, and inspired only by the enthusiasm and energy of their authors.

ORIGINAL ARTICLES.

CONTRIBUTIONS TO THE CLINICAL HISTORY OF SYPHILIS.

BY H. GRADLE, M.D.,
OF CHICAGO.

(*Concluded from page 652.*)

The following case has but an incomplete record, but the past history and the array of symptoms presented by the patient give it some clinical interest. The diagnosis of syphilis was disputed by the patient, but seemed to be inevitable.

Case 3.—Persistent headache for months, with nocturnal exacerbations. Repeated transient attacks of hemi-paresis. Sudden blindness receding spontaneously. Paralysis of branches of the oculo-motor, and some other cerebral nerves.

History.—A. W., a laborer. æt. 32, had always been in good health, with the exception of malaria in 1878 and a short relapse in 1879. He denies syphilitic infection strenuously, but admits of having run the chances of it during his youth. He has two healthy children. He has never smoked or drank to excess. Eight months ago he was attacked by severe frontal headache lasting almost steadily, and always worse at night. About five weeks ago this became more limited to the left side, and has since diminished gradually. He has suffered from sleeplessness, but is better now. Four months ago he felt a sudden weakness of the left side of the body, which passed off soon, but recurred four times the same day. Since that time he has had some dizziness occasionally. Two months ago, while at work, his sight failed him almost completely. He had to grope his way, but did manage to get home without guidance. The left eye recovered in three or four days. The sight of the right eye improved likewise, but is even yet not quite normal. As his sight returned, objects appeared to him double, for which annoyance, principally, he consulted me. At first the right eye could not be opened fully on account of weakness of the lid. This trouble has now passed from the right to the left side.

Present Condition.—October 19, 1886. The eyes appear normal externally and the pupils respond to light. The left eye has a V. $\frac{20}{35}$, normal field, color and light sense. Ophthalmoscopically, the only peculiarity is tortuosity of the retinal arteries. Otherwise the disc, retina and vessels are normal, which is also true of the right side. The retinal arteries, however, appear a trifle narrower in the right eye

than in the left. The refraction in both eyes is that of very slight hypermetropic astigmatism. Field and light-sense are normal in the right eye, but colors appear dimmer than with the left eye; they are, however, correctly seen. V. is $\frac{2}{5}\frac{0}{0}$, undoubtedly on account of a faint corneal opacity dating back to childhood. Yet the visual power is not normal in either eye, for the patient cannot read more than a few lines with either eye, the other being covered, before everything becomes misty, even with convex glasses. Especially is this true of the right eye. On the left side there is incomplete ptosis and paralysis of the superior rectus muscle; the right superior rectus is merely paretic, but still obeys some. But the right external rectus is entirely paralyzed. Although the right eye can turn towards the left side on looking to the left, it does not move at all during efforts at convergence.

The patient is a muscular man who has, however, lost in strength and in weight to the extent of some twenty-five lbs. since the disease began. Besides the paralysis of the ocular nerves he presents slight paresis of the labial and nasal branches of the right facial nerve. The tongue deviates to the left side. The palate is normal in its movements. Apart from the general weakness there exists no other muscular disturbance. The knee-jerk is, if anything, exaggerated on both sides. His sexual power and desire have gradually failed, and are now gone entirely. There is no sensory anomaly.

The heart and, as far as could be learned, all other visceral organs, are normal. He is somewhat constipated, but seems to feel no direct effects from it. His urine, of a sp. gravity of 1023, is chemically normal, but has an abundant but very delicate precipitate, which consists microscopically of fragments of structureless pliable membrane, to which the stained amorphous urates cling. The significance of this deposit I have not been able to learn.

The patient was put upon iodide of potassium, 1.3 four times a day, and one dose of calomel was given for the bowels. Two days later there was no change, beyond slight increase of the ptosis of the left lid. Mercurial inunctions were now begun twice daily, and quinine ordered three times per day, in the dose of 0.3 grams. To keep the bowels regular, sulphate of sodium was to be taken in hot water on rising. Four days later he showed a decided improvement in his malaise, headache, sleeplessness and general condition, but objectively there was no change. For the quinine, strychnia was now substituted to the extent of 3 milligrams twice a day. He was seen the last time on November 4, *i. e.*, after 16 days of treatment, when he felt better in every way subjectively, but was anxious to have his diplopia cured. He was told that this could not be promised with certainty, as the lesion might possibly be irreparable on account of the duration of the disease, but that he could go to work if he felt strong enough. He was ordered to continue the iodide of potassium and strychnia, and to suspend the mercury. But he did not return after that day.

Although the patient did not remember any syphilitic infection or symptoms, and no characteristic lesions could be found externally, I believe that the continuous headache, worse at night, the apoplectiform attacks without loss of consciousness at the age of 32 years, the exaggerated knee jerk, and the multiplicity and changeability of the pareses of the ocular nerves, admit of no other diagnosis but gummatous meningitis, probably with extensive syphilitic disease of the cerebral arteries. He was markedly benefited, as far as comfort and subjective feeling were concerned, by the antisyphilitic treatment, though no objective change occurred. But, whatever way the various nerve-paralyses of the ocular and facial nerves were produced, they had probably led to partial degeneration by the time I saw the patient. The recovery, if at all possible, could hence not be expected within any short period of time. According to the patient's statement he had probably had some iodide of potassium from another physician before I saw him. But of this I am not certain. The data do not seem to me sufficient to determine accurately which particular lesion caused the sudden transient blindness. There was nothing visible in the eye to indicate its character. The tortuosity of the retinal arteries may have preëxisted. The veins were certainly normal. Of special interest is the dissociation of the two nerve paths controlling the internal rectus muscle of the right eye. Although the patient could turn the right eye freely towards the left, he was not able to perform the same movement on attempting to converge the two eyes for an object approaching in the median line. The symptom suggests an encroachment of the disease upon the nuclei of the ocular nerves beneath the third ventricle, for it is there only where the nerve tracks of convergence and of independent action of the internal rectus are separated from each other.

The following two cases would not present any features of special interest had the syphilis followed its ordinary clinical course. They illustrate, however, the occurrence of very late tertiary symptoms after unusual mildness or absence of earlier symptoms. Hence their diagnostic value.

Case 4.—Gumma at the Root of the Tongue. Mr. S., æt. 32, had noticed for some two months some irritation of the lower part of the throat, lately amounting to pain on swallowing, with radiation of pain towards the ears. He had always enjoyed good health. On December 12, 1885, I found his ears normal. There was slight hypertrophic catarrh of the pharynx, but on looking down with the laryngoscope there was seen a flat nodule, about the size of an almond, at the root of the tongue just in front of the epiglottis. It had about the color of the mucous membrane in that region, but its centre was ulcerated, with steep edges. It felt hard to the finger. No enlarged glands could be detected under the jaw. Was it epithelioma, gumma, or, less likely, tubercular infiltration? The patient, perfectly honest and thoroughly frightened, knew nothing of previous syphilis, and he seemed to be sufficiently self-observing to entitle his judgment to credit. He had had a gonorrhœa during his youth, but never anything else. Moreover, his wife and child were healthy.

Dr. Fenger was asked in consultation, but he, too,

was unable to decide the diagnosis absolutely. He advised, however, antisyphilitic treatment, until he could examine microscopically a bit of the nodule which he snipped off at the time. Mercurial inunction and the use of iodide of potassium to the extent of 1.5 four times per day were at once begun. Within three days the diagnosis was assured by the subjective improvement of the patient, the report of Dr. Fenger of finding the tumor to be a granuloma and the recollection of Mr. S. that some years ago he had had persistent pains in the bone of the leg. However no nodes could be found on the tibia. The steady improvement now continued until the gumma entirely disappeared in the course of three weeks.

Case 5.—Gummatous Infiltration of the Soft Palate. Mr. B. has complained for several months of obstruction of the nose, loss of smell, discomfort in the palate and throat, sometimes slight pain and lately obstruction of the right ear and dimmished hearing. He is 32 years old, has never been sick since childhood and has a healthy wife and child.

Present Condition.—Nov. 1, 1886. The ears, especially the right one, show the effect of closure of the Eustachian tube. The use of the catheter relieves subjectively and improves the hearing, and I may as well add at once that daily catheterization rendered the ears perfect in a fortnight. The nasal mucous membrane was reddened, the passage narrowed by enlargement of the cavernous tissue. The rear part of the inferior meati was filled with crusts, not however presenting the smell of ozæna. The rear of the nose could not be examined very fully on account of the narrow configuration. There was some hypertrophic catarrh of the pharynx. The soft palate was swollen in its central part and congested, but the livid color indicated venous stasis rather than arterial hyperæmia. There was no tenderness indicative of an abscess. At the juncture of the front and rear pillars of the palate on the right side there was a small ulcer. The patient was so sensitive and inclined to vomit, that the rhinoscopic mirror could not be used then and even later on it was so disagreeable to him that I did not make any further attempts.

I could but diagnosticate an infiltration of the soft palate, probably of syphilitic nature, with consecutive irritation of pharynx and nose. But the patient had absolutely no syphilitic history. Both from personal acquaintance, and his evident anxiety, I feel confident of the correctness of his statements. Moreover, there were no other objective evidences of the disease. I concluded to wait a few days, using in the meantime the Eustachian catheter, the post-nasal syringe, an insufflation of nitrate of silver followed by iodoform, and directing him to wear absorbent cotton in the nostrils to prevent the formation of crusts. He improved in comfort but during the next week the infiltration of the soft palate increased, the ulcer over the right tonsil deepened into a fistula about 1.5 centimeter deep and two other small ulcers appeared on the oral surface of the palate. I now ordered inunctions of mercury and four grammes of iodide of potassium per day. The patient delayed this order a couple of days, during which time the ulceration and infiltration of increased. On Nov. 11, he began the specific treatment and within three days its influence was noticeable. About one month later the parts were practically normal. The local treatment had been continued two to three times per week and had no doubt caused the nasal and pharyngeal catarrh to disappear at the same rate as the gumma, since its omission during several days was always noticeable to the patient.

When did these two patients acquire syphilis? For I fully believe their ignorance of the disease. There was not the least indication of congenital disease on the skin, teeth or eye, and nothing suggesting this view in their own or their family histories. Perhaps infection occurred accidentally during childhood, followed by a very benign syphilis as it is often observed in children. Possibly they may have had chancres too insignificant to be noticed, and not followed by secondary symptoms. I have seen two cases of typical hard chancres not followed by secondary consequences. Believing fully in the dual nature of venereal sores, I would not speak of these as hard chancres had they not presented all the characteristic appearance, viz., indurated base, indolent ulceration not progressive in extent, and a long period of incubation after suspicious intercourse. These cases can be briefly detailed.

Case 6.—Gonorrhœa one week after intercourse. Typical hard chancre in the uretha one inch behind the orifice occurring during the second week of the gonorrhœa and lasting about two weeks under iodoform insufflation. Painless induration of the inguinal glands. No Syphilis. This happened to a young man in 1881. I have since seen him socially and professionally very often, and can vouch for his present health. He married one and a half years later and his wife and two children are healthy.

Case 7.—Typical hard chancre behind the glans about twelve days after intercourse. Slight induration of the inguinal glands. No Syphilis. The patient had been circumcised and there was no chance for a clean excision of the chancre. It lasted about twenty-five days. As he is a married man I explained to him the great responsibility. This happened in Feb., 1885, and I have since watched him in vain for syphilis. He has remained free to date.

Will these two patients ever present tertiary symptoms?

Although I see but rarely any patients with syphilis except it involves the eye or ear, it may be of interest to detail my limited experience in the abortion of syphilis by excision of the initial lesion. I have done this five times. One case was a failure. Four were followed by unqualified success. The operation is simple enough when anatomically feasible. I have operated of course antiseptically and used sutures where the edges of the small wound gaped.

Excision of Chancres.—Case 1.—Dispensary patient of whom no full record was kept. Man 23 years of age. Typical hard chancre on the rather short prepuce near the frenulum which was excisd in September, 1877. No (?) buboes. Union by first intention. Seen of and on during the next three months during which time no secondary symptoms appeared.

Case 2.—Mr. B., circumcised, contracted a hard chancre on the scrotum two weeks after exposure. Excised on the fourth day (July 3, 1880). The wound reopened in spite of stitches and changed into a characteristic chancre, which required five weeks to heal. Three days after excision a bubo appeared in the left groin. Six weeks after the operation roseola and sore throat indicated constitutional syphilis.

Case 3.—Mr. S., a married man of 48 years of age, observed a pimple on the prepuce three weeks after an illegitimate intercourse. On the sixth day of the disease I found a flat nodule of the size of half a pea with funnel shaped ulcerated centre and well marked induration. No buboes. Excision. (July 19, 1880.) Wound became ulcerated and assumed appearance of a large hard chancre which healed slowly by the middle of August under the use of iodoform, but not until it had been cauterized with nitric acid. A soft chancre was excluded by the hardness of the base and the absence of any progressive ulceration. No buboes formed. The patient observed himself closely and came often for examination during the next three months. I have seen him a number of times since and have never found any evidence of syphilis.

Case. 4.—Mr. M. had had a gonorrhœa since six weeks. He was about well when he exposed himself again two weeks ago. This rekindled the urethal discharge and produced an inflamed and tender bubo on the *right* side. Since six days (about eight or nine days of incubation) he detected a pimple on the *left* side of the frenulum on the foreskin (which had been circumcised at birth). At the time I saw him (Feb. 8, 1884,) this pimple had developed into a typical hard chancre. In the left groin four or five very small but hard glands could be felt which he thought had always been there. Excision. The wound did not close entirely by first intention, but remained healthy and aseptic under iodoform. Within a week it was healed. But the bubo on the right side began to trouble him so that he went to a hospital, where it was opened. This suppurating gland being on the other side of the median line, could not have been started by the hard chancre, but must be attributed to the gonorrhœa. I saw the patient various times while in the hospital, where he stayed five weeks, and again in October the same year, without finding any evidence of syphilis.

Case 5.—Mr. T. complained of discomfort and an oozing from the penis two weeks after intercourse, and called on me about three days later. The prepuce was long and tight and could be stripped back only with difficulty. On its inner surface near the edge there was an ulcer with hard base and all appearances of a hard chancre. After washing with corrosive sublimate solution ($\frac{1}{10}$ per cent.) I returned the foreskin over the glans, applied pellets of cotton moistened with cocaine solution to the mucous surface, and without much pain to the patient removed the chancre by performing ordinary circumcision, closing the wound with a few stitches. There were no buboes at the time (Jan. 13, 1885). The wound did not heal entirely by first intention, but did not become hardened or unhealthy in appearance. It was closed by Jan. 30. The patient fully warned as to the significance of syphilis should any symptoms occur, did not return to my office until April, 1887, for some other complaint. He had not had any indications of constitutional syphilis.

Typical hard chancres not followed by constitutional syphilis, as in cases 6 and 7, occur too rarely to explain the success of this small series of excisions.

TREPHINING IN A CASE OF INTER-MENINGEAL HÆMATOMA, WITH HEMIPLEGIA. RECOVERY.

Read in the Section on Surgery and Anatomy, at the Thirty-Eighth Annual Meeting of the American Medical Association.

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In presenting to this Section the history of a single case, it is hoped that the interest attached to the subject of cerebral localization from a surgical standpoint, as well as the comparative rarity of recorded operations for the conditions herein reported, will prove to be sufficient excuse for soliciting your indulgence.

Case.—George Jones, negro, aged 53 years, a native of Virginia, shoemaker by occupation, on February 27, 1887, was struck on the left forehead by a brick, the edge of the missile producing an irregular, lacerated wound, about one-half an inch above the external edge of the eyebrow. He was unconscious for a short time; cold water dressings were applied to staunch the hæmorrhage from the wound, and he was put to bed.

I was called to see the patient on the morning of February 28, and found his general condition good, but the wound unpromising on account of being filled with dirt particles acquired from the brick. Probing detected no denudation of, or other injury to, the skull. The wound was cleansed as much as possible, and dressed antiseptically. There was no subsequent malaise, though slight annoyance from roaring in the left side of the head; he walked half a mile to my office, when subsequent dressings were required; and the wound having healed by granulation, he was discharged, recovered, on March 14.

He consulted me again on April 24, stating that the roaring in the head had continued, and that on April 18, while walking, he suddenly noticed a tendency of the right foot to drag slightly. On the 19th, while eating breakfast, his head fell forward on the table, and his right arm and leg seemed paralyzed; that morning he had a slight chill followed by fever. Since the 19th, the right foot dragged a little more, and he would notice an occasional loss of control of the muscles of the right leg and arm.

At this examination the presence of *arcus senilis* was noticed; the pupils were small, but responded well to light. The right ear heard the watch at six inches; the left at three. The tongue was protruded straight, and the facial muscles were not involved. The heart's action was regular; pulse 90, tense, and

arteries rigid. Muscular power of hands (tested by my own, no dynamometer at hand) the same. Either from dulness of the patient, or the existence of slight anæsthesia, no satisfactory results were obtained from the æsthesiometer. In walking he drags the right foot slightly. On April 26, the paralysis of the lower extremity was more marked, and on the 28th the right arm was found to be less powerful than the left. The symptoms, as presented, had evidenced a cortical cerebral lesion, affecting the middle frontal convolution (which lay beneath the site of the original injury) and extending upward and backward gradually involving the ascending frontal convolution. The lesion seemed thus circumscribed because if it involved the inferior frontal convolution there would have been aphasic symptoms present.

In view of the chilly sensations every morning, the septic character of the wound, and the slow but late development of the hemiplegia, it seemed probable that septic matter had been absorbed, and an internal purulent inflammation developed. The condition was carefully explained to him, and an operation advised as a *dernier ressort*. On April 29, Dr. Nalle, of Memphis, was called in consultation, and he agreed in the necessity for an operation. Dr. J. L. Minor made an ophthalmoscopic examination, and found: "the right eye, optic nerve red, border indistinct, vein large and slightly tortuous—diagnosis, low grade of optic neuritis; left eye, optic nerve red, border indistinct, prominent from œdematous infiltration, veins large and tortuous—diagnosis, optic neuritis."

On May 1, assisted by Drs. J. L. Minor and R. M. Pate, of Memphis, the patient having been bathed, bowels vacuated, scalp shaved, etc., chloroform anæsthesia was produced, and a curved incision made, the convexity towards the eyebrow, and the incision extending upwards on the scalp so that, if necessary, it could be continued to a point over the upper portion of the ascending frontal convolution; if the operation demonstrated no lesion over the middle frontal convolution, and trephining would have to be repeated higher up. Some time was spent in controlling the free hæmorrhage resulting from the incision; the periosteum was eventually reflected, Galt's trephine applied, and the button of bone removed. A small branch of the meningeal artery presented on the dura-mater, and hæmorrhage from it was controlled by applications of hot water.

No intra-cranial fracture of the bone was found. The dura-mater was dark colored, and had no communicated pulsation from the brain. The long needle of a large sized hypodermic syringe, was passed through the dura-mater, and on withdrawing the piston the chamber of the syringe was filled with dark brown blood. Removing the needle similarly colored blood was ejected from the puncture in the dura mater, and with a bistoury the hole was slightly enlarged, permitting the pulsations of the brain to throw out the fluid in larger quantities, until it was almost evacuated. Four strands of disinfected horsehair were passed through the dural incision in order to secure drainage, boracic acid applied to the wound, the flaps replaced, a layer of absorbent cotton loosely covered it, and bandage applied. The operation had lasted an hour, and several times hypodermatic injections of brandy were given. The patient seemed to be quite weak at the completion, and he was ordered brandy every half hour. At 7:30 o'clock in the evening he was visited: the dressings were stained with dark blood discharged from the meningeal space. He was feeling perfectly comfortable, his pulse was 72, temperature 98.6° F., and his muscular control of the right arm and leg *had returned*. Morph. sulph. gr. ⅓ at bed time.

May 2. He reported having rested well during the night. No pain in the wound. Pulse 78, temperature 98.4°. Had eaten a light breakfast. He was kept quiet—in bed—for a week; the wound was dressed every third day; and on May 8, he sat up, and was able to walk about the house with undiminished muscular control. No untoward symptom subsequently presented, the man being now as well as ever, A microscopical examination of the blood withdrawn by the syringe showed it to consist of a brown colored serum and colorless red blood corpuscles. It seemed devoid of fibrin ferment, as it did not coagulate.

In regard to finding blood, instead of pus, this corroborated the dictum of Nancrede (International Cyclopædia of Surgery, Vol. V, p. 50): "A differential diagnosis can, under the most favorable circumstances, be only probable, and in most instances impossible."

Pathologically the case is still obscure, and the comprehensive term of inter-meningeal hæmatoma was adopted as most closely covering the condition as evidenced. Agnew (Surgery, Vol. I, p. 287) explains the condition as "a vascular paralysis so modifying the vital properties of the walls of the blood-vessels of the brain, as to favor the free escape of their liquid contents." Considering the non-coagulability of the blood—and had the hæmorrhage been from a ruptured vein or artery, clot would have been present—this explanation is worthy of consideration. Pachymeningitis would have presented somewhat identical symptoms, as in the case of Professor Grainger Stewart referred to below.

The literature of this subject is scanty, though the surgical popularity of trephining from most ancient times is well-known, and it is scarcely improbable that similar cases have presented earlier symptoms of compression and have been successfully operated upon. Indeed, Kurt Sprengel, in the elaborate history of the operation, refers[1] to Meekren (circ. 1519), Binninger (circ. 1673), Jean Murat (1711), Jean Jacques Wepfer (1717), Jean Maurice Hoffman (1719), and Laurant Heister (1758), having trephined for the relief of effusion in cases of injury to the head without fracture of the skull. Nancrede (op. cit.) refers to successful operations by Morand (Opusculi de Chir., Paris, 1768. T. 1. p. 171), Ogle (Brodie, *Med-chir. Trans.*, Vol. XIV, p. 391), and Bruns (Handbuch der prehtisch. Chir. Ab. I, S. 931). Dr. Physick, in the latter part of the last century, in a case of contusion of the head without

[1] Histoire de la Médecine, Traduite par Jourdan. Paris, 1815. T VII, p. 25, et. seq.

evident fracture, trephined for the relief of cerebral symptoms, extracted a blood clot, and the patient recovered.

In contemporary literature Jones, (*Lancet*, 1881, II, p. 40), in a male, aged 19, in whom insensibility, convulsions, and paralysis of the right side, followed a fall on the head, trephined over the middle meningeal artery. Death followed. Necropsy showed tear of longitudinal sinus.

N. Weljaminow (*St. Petersburg med. Wochen.*, 1881, VI, p. 455–7) reports a successful case of trephining for intra-cranial hæmorrhage. And Weir (Gross' Surgery, Vol. II, p. 44), trephined for relief of coma and slight hemiplegia, removed a clot between the brain and dura. Death in a few days.

Sylvestrini (*Bull. de l' Acad. de Méd., Paris*, 1883, p. 439), reported a case of kick from a horse over the right temporo-frontal region of a boy aged 15. Two months after the injury, temporary right hemiplegia. Five months later, paralysis of right arm and leg and lower part of right side of the face, complete aphasia, incontinence of urine and fæces, right hemi-epilepsy. He trephined over the centres for the upper and lower extremities, extracted piecemeal a hard organized clot. Patient died on fourth day from purulent meningitis and brain abscess.

Hulke (*Lancet*, 1883, Vol. II, p. 814), in a case of blow over the right temple followed by right hemiplegia and coma, and later spastic rigidity of the left arm, trephined and evacuated inflammatory fluid by dural incision. The cerebral symptoms disappeared and the patient recovered.

Surgeon Major J. Ewart (*Ind. Ann. Med. Sci.*, Calcutta, 1873–4, XVI, p. 165), trephined to relieve symptoms of extravasation of blood in a case of injury to brain caused by a fall from a horse. Partial relief of symptoms; death of patient.

Bryant (*Lancet*, 1884, Vol. II, p. 823), in a case of scalp wound followed by brain symptoms, trephined on the thirteenth day affording temporary relief, but the patient died on the twenty-fourth day after the accident, from meningitis and bronchopneumonia.

Grainger Stewart (*British Med. Jour.*, Vol. 1, 1887, p. 877), in the case of a man who fell, striking the head, slightly wounding the scalp, but suffering no inconvenience for two weeks, when severe headache commenced, and later feebleness of legs and staggering walk succeeded by right hemiplegia, trephined two months after injury over posterior part of third left frontal convolution. Incising the dura-mater a hæmorrhagic effusion was evacuated. Motor power returned after operation. The patient died on the sixth day of leptomeningitis.

This list is possibly incomplete, including only reports of such cases as were accessible. However, they demonstrate that in cases of injury to the head, without injury to the skull, in which late symptoms of cortical brain complications appear, the locality of the trouble may be ascertained by the rules of cerebral localization, and operative interference will offer hope of improvement if not of complete recovery.

MEDICAL PROGRESS.

Antipyrin and Antifebrin in Headache and Epilepsy.—In a paper on this subject Dr. Allen McLane Hamilton says: In January last Ungar related his experience with antipyrin in the treatment of hemicrania, and in March Dr. C. B. Lyman, who had been induced to try the remedy after the publication of Ungar's success, administered it in several cases of neuralgia of the cervical, facial, and supra-orbital or mixed varieties, with more or less benefit. The first of these observers experimented with it as a successor to the salicylates, which have proved to be of great value in his hands in several varieties of headache, and he witnessed no evil results from doses of even 23 grains. Lyman used an initial dose of 15 grains, repeated two or three times if necessary, and relieved the paroxysms, but did not prevent their recurrence. In March last I began a trial of this drug, and afterward its successor, antifebrin, in a variety of headaches, in insomnia, and in epilepsy. Some of these cases had been treated with more or less success with the salicylate of sodium, and the usual remedies, and the cases of epilepsy were under modified bromide or other treatment. The cases of headache selected were those of migraine of angeio spastic and angeioparetic varieties, as well as ordinary facial or suboccipital neuralgias; and the cases of epilepsy which were chosen were those of the symptomatic form complicated with objective and subjective indication of cerebral disease, as well as the simpler forms which seemed to be dependent upon continued states of cerebral ischæmia, cerebral instability, etc.

In angeio spastic migraine with evidences of cutaneous anæmia, dilated pupils, and coldness, the headache commencing in the morning, I found both antipyrin and antifebrin would quickly abort the paroxysms after the first dose.

In four cases of epilepsy in which either antipyrin or antifebrin was used there was some improvement in three of the cases, in each of which there was post epileptic headache; and aggravation of the disease in the fourth, the patient's paroxysms being symptomatic of coarse cerebral disease. In one case of pure hystero-epilepsy the beneficial action of the remedies were absent.

I have also used both drugs in cases of habitual insomnia in doses varying from 3 to 8 grains of the antifebrir, and 10 to 20 of the antipyrin, without appreciable result, though in a case of maniacal excitement, due to nervous exhaustion and connected with moderate rise of temperature (102° F.), 15 grains of antipyrin repeated twice produced refreshing sleep and a subsidence of excitement. There can be no doubt, however, that in wakefulness due to general disease, especially with high temperature (and I have seen such), the value of both of these drugs as hypnotics is very great.

It would seem as if both remedies were of value in headaches or cerebral states attended by anæmia, or in the excitement due to cell mal-nutrition and exhaustion; and, though antipyrin seems to be the

more serviceable remedy, it possesses drawbacks which do not belong to antifebrine. It would appear as if the remedies were valueless or even harmful in cases of organic or symptomatic epilepsy, but worthy of a trial in the light cases attended by rather general cerebral vascular spasm and not much muscular movement. In several cases of *petit mal* the good effect of continued doses of antipyrin and antifebrine is manifest, for the losses of consciousness are far less frequent than when the patients were under other treatment. So far as tolerance goes, I have given to one patient 45 grains of antipyrin in two hours without ill effects.—*N. Y. Medical Journal*, May 28, 1887.

CARBOLIC ACID INHALATIONS IN WHOOPING COUGH.—In the *Deutsche Med. Wochenschrift*, No. 21, 1886, DR. R. PICK, of Koblentz, published several cases which seem to show that the inhalation of concentrated carbolic acid solutions has a powerful curative action in whooping-cough. Dr. Kniaziolucki, of St. Zofia's Hospital in Lvov, in Galicia, (*Wiadomosis Lekarskie*,) No. 3, 1886, p. 82), accordingly tried the same method in a severe case of his own occurring in a weak, emaciated, febrile girl, aged 9. The affection had lasted for about four weeks, and the paroxysms occurred about twenty-eight times a day. The inhalations of carbolic acid, either pure or diluted with an equal amount of distilled water, were repeated hourly, the administration being continued for ten minutes on each occasion. The number of paroxysms during the subsequent days fell to 20, 19, 12, 12, 6 respectively, and from the sixth day of the treatment the patient had not a single attack. The temperature became normal on the third day. After ten days' stay in the hospital the girl was discharged quite well. No poisonous symptoms were observed either in this case or in those related by Dr. Pick. Equally satisfactory results were obtained by Dr. W. Jakobski, of Odessa (*Wiadomosis Lekarskie*, No. 9, 1887, p. 280), who used a 50 per cent. solution of the acid, the inhalations being carried out for ten minutes every two hours. In one of his cases the daily number of paroxysms fell rapidly from thirty-two to six. Dr. Jakobski differs from Pick and Kniaziolucki only as regard the details of the method. They principally employ a mask resembling that used for giving chloroform; this is placed over the patient's nose and mouth. Dr. Jakobski, on the other hand, finding that this apparatus frightened children and led them to resist the application, devised an instrument like a toy, consisting of a pastboard tube with gold paper gummed over it, and fitted with a handle. Within the tube are two thread nets, and between them a layer of Bruns' cotton-wool, which is moistened with the carbolic solution. Jakobski found that with this there was no difficulty in getting the little patients to take the inhalations.—*British Medical Journal*, April 30, 1887.

IODOL IN LARYNGEAL TUBERCULOSIS.—In the *Journal of Laryngology* for February, 1887, LUBLINSKI's conclusions are given as follows: Iodol is scarcely soluble in water, but is dissolved by alcohol and ether. Schmidt proposed a mixture of iodol, 1 part; alcohol, 16 parts; glycerine, 34 parts. This is, however, too weak. Lublinski has used the powder pure for laryngeal insufflation. It causes no pain or cough, and it remains a long time in contact with the surface. He has used it in the treatment of fifteen cases of tuberculosis. He administered one insufflation daily, or, in some cases, two or three times a week. Under its influence ulceration quickly heals, the base becoming clean and granulating, dysphagia disappears, and the patient's health improves. Tannin, boric acid, lactic acid, and other applications will produce this effect, but not so rapidly as iodol, the action of which is striking. He gives details of two cases of tuberculosis in particular, in which iodol produced rapid curative effects. In both there was extensive ulceration. The author also regards iodol as useful in ozæna and scrofulous rhinitis, with ulcers on the septum.

JÁMBÚL SEEDS IN DIABETES.—In 1883 Mr Banatrala called attention to jámbúl as a remedy in chronic diabetes. DR. GEORGE C. KINGSBURY thinks the drug has not received as much attention from the profession as it deserves. The seeds are the product of *Eugenia jambolana*, and must not be confounded with "jumble heads" or jequirity seeds, an infusion of which was introduced a few years ago as an application for granular lids.

He lately tried powdered jámbúl seeds in a case of diabetes in which the patient had been ill for over six months, was greatly emaciated, and quite prostrate. He was suffering from great thirst and ravenous appetite; there was also great restlessness. The urine had a specific gravity of 1040 to 1042, and from seven to seven and one half quarts were passed in the twenty four hours. Five grains were given six times in the twenty-four hours for a fortnight. At the end of that period, the patient was able to get up, and walk out for an hour at a time, was neither thirsty nor abnormally hungry, and was passing four to five quarts of urine of a specific gravity of 1020; he could sleep well, and felt strong. During the time he was taking the jámbúl his diet was not restricted in any way.—*British Medical Journal*, March 19, 1887.

IODIDE OF SODIUM.—Iodide of sodium is considered by DR. RICHARDSON as a valuable substitute for, or adjunct to, iodide of potassium. In chronic eczema and painful rheumatic affections it often answers well when iodide of potassium does not agree with the digestion. Combined with arsenic it is useful in lepra and psoriasis. Externally applied, in cases of indolent ulcer, chronic syphilitic sores, and offensive discharges from the nostrils, it acts as a good antiseptic. The following is a useful formula for the purpose: Sodium iodide, ℥ss; tincture of myrrh, ℥i; rectified spirit, ℥ii; distilled water, ℥vi; to make a solution of eight ounces. Used in the form of fine spray from Seigle's steam spray-inhaler, Dr. R. found it of the greatest service in a case of syphilitic ulceration of the fauces.—*Provincial Med. Jour.*, Mar. 1, 1887.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

The Editor of this Journal would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, JUNE 18, 1887.

AMERICAN MEDICAL ASSOCIATION.

The thirty-eighth annual session of the American Medical Association, held in Chicago, June 7 to 10 inclusive, proved to be one of the largest, most pleasant, and most profitable that has been held during the history of the Association. The large auditorium of Central Music Hall was full to overflowing during the general meetings, and the several Section rooms were better attended and supplied with more interesting papers than usual. The aggregate number in attendance was not only unusually large, but it embraced members from almost every State and Territory in the Union. Instead of being substantially a Western gathering, there were present a fair number of representatives from every State east and southeast from Maine to Florida, except Delaware, and from all other States except Oregon in the extreme Northwest. The quantity and quality of the scientific and practical work accomplished will compare favorably with that of any preceding meeting; and the evening receptions, both general and private, were well arranged and appeared to give entire satisfaction to those for whom they had been prepared. The following officers were elected for the ensuing year: President, A. Y. P. Garnett, of Washington, D. C. Vice Presidents—Duncan Eve, of Nashville, Tenn.; David Collville, New York; Charles O'Hagan, North Carolina; and A. Stedman, of Colorado. Permanent Secretary—W. B. Atkinson, Philadelphia. Assistant Secretary—Jos. Ransohoff. Cincinnati. Treasurer, Richard J. Dunglison, Philadelphia. Librarian—C. H. A. Kleinschmidt, Washington, D. C.

Cincinnati, O., was selected as the place for the next annual meeting, and Dr. W. W. Dawson, of that city, was appointed Chairman of the Committee of Arrangements. The full official record of proceedings will be published in the next number of The Journal.

THE BERGEON METHOD AGAIN.

It was with some surprise that many members of the Association heard the Chairman of the Section on Practical Medicine, in his address last week, utterly condemn the Bergeon method, after making the indefinite statement that he had given it a "fair trial." The *rationale* of the gaseous treatment of phthisis has been given so fully in former issues of The Journal that it is quite needless to go over the ground again. But it seems that certain facts in regard to the method need repetition.

Whatever may be the reasons assigned for the use of any method or drug, the value of it must depend on the results obtained in actual practice. If a theory seem to be correct and success be not obtained by a practical application of the theory, we may be certain that: 1. The theory is wrong; or 2. That the test was incorrectly applied. On the other hand, while a method may be theoretically wrong, what seems to be a practical application of it may be productive of good results. And if such be the case, what does it matter, practically, if the theory is wrong? If we can do the same amount of work, and good work, by putting the cart before the horse, let us travel in that way until some one shows us how we can do better work by a reversal of the process. Why, then, should Bergeon's method be dismissed with the assertions: "The theory upon which this treatment is based is that this gas is absorbed through the intestinal mucous membrane, and exhaled through the pulmonary surfaces, and coming in contact with the pathogenic microbes there destroys them. Dr. Bergeon must have forgotten that these microbes are not found in the alveoli free from disease, and where, if at all, the gas must be exhaled, but in the solid tubercular masses occupying these air sacks, into which the gas can hardly penetrate, and from which no exhalations can take place. Even then, admitting that his mixed gases can destroy the microbes, which seems highly improbable in view of the fact that they are continually exposed to an atmosphere so highly charged with carbonic dioxide that its retention in the lungs for five minutes will produce unconsciousness, it does not seem very clear how they are to reach the objects intended to be destroyed. Accordingly we find that in other hands the plan has proved to be a wretched failure." These statements need

no other criticism than to say that in the hands of a number of men, other than Bergeon, this method has given good, if not satisfactory, results.

As we have already said in a former editorial, it is too early to draw definite and exact conclusions as to the value of Bergeon's method. But however wrong Bergeon's theory may be, if it be wrong (and so high an authority as Cornil has not found objections to it) the fact remains that good results have been obtained by the practical application of the method. More than this, the scientific world is not satisfied with such assertions as that one or two men have given a method a "fair trial." The details of the trial should be given, after which it is no difficult matter to see whether or not mistakes were made in the experiment. Mankind is too prone to error to accept unsupported assertions. Too fresh in our memory, in connection with this subject, is the statement made four years ago by an eminent pathologist that he had caused tuberculosis in rabbits by the inoculation of inert substances—and the subsequent proof that his methods were faulty and his statements incorrect.

Is antiseptic, or aseptic, medicine an impossibility? Is it true that anything which will destroy microbes must necessarily also destroy the cells of living body-tissue? Do we not know already that different microbes are differently affected by so-called germicides, and by different agents? And do we not constantly see such things in relations to creatures of a higher plane? Why should we assert positively that whatever will kill germs must destroy living body-cells, when we know that parasites of a higher order can be destroyed and expelled from the body without injury to the patient. There are men living to-day who would have asserted twenty-five years ago—fifteen years ago—that aseptic surgery was impossible; and there are still those who endeavor, despite the light set before them, that antiseptic surgery and obstretrics is a myth—a delusion. There are very, very few things of which we can assert impossibility. And, certainly, the labors of Selmi, Gautier, Tanret, Brieger, Brouardel, Martini, Dujardin-Beaumetz and Goetze may be said to be a sufficient answer to those who assert that antiseptic medicine is impossible.

There is, as we said a few weeks since, a tendency among American physicians to run after novelties. But while avoiding a headlong rush after new things let us avoid the opposite extreme, and by all means let us not decry honest work. Whatever is bad must be shown, proved, to be bad by actual experiment and trial; what is good we must remain in ignorance of until it is shown to be good. But the day is past when assertions can prove or disprove anything to scientific men.

To conclude this matter, as to Bergeon's method and antiseptic medicine, we may quote the conclusions of Dr. E. L. Trudeau, of Saranac Lake, N. Y., in a paper entitled "A case of Phthisis treated for eight weeks by Rectal Injections of Gas. With Notes and Experiments," which may be found in the *Medical News*, April 23, 1887: *The gas as it enters the body appears to have no germicidal value whatever.* A satisfactory conclusion as to the real therapeutic merit of this method, cannot necessarily be reached for many months to come, but so far as the evidence procured by its application to one case for so short a time may be of value, it would seem that rectal injections of gas by Bergeon's method have a beneficial influence on the suppurative processes of phthisis. The method seems deserving of a most thorough and extended investigation, and *though the treatment may prove in the future to be a useful therapeutic measure, a consideration of the facts here presented does not in the least warrant the assumption that a specific for tuberculosis has been discovered.*

FOOD ADULTERATION.

A recent issue of the New York *World* contained a list of adulterants found in articles of food and drink, which is instructive reading to the public generally, and to sanitarians particularly. It is of interest to every dweller in a civilized community, and of quite as much importance to this country as its commerce, the improvements of its rivers and harbors, or any questions of coast defense. On reading the list one is amazed at the ingenuity and dishonesty of civilized, Christian man. The majority of our foods and condiments, of our articles of drink, are so adulterated that it may now well be said: he is a wise man who knows what he is eating. It has not been very long since we commented on this subject—but so long as the evil exists it is of importance that repeated attention be called to it. Below we give the list as printed in the *World*:

Coffee (ground).—Chicory, peas, beans, date-stones, biscuits, figs, roasted hominy, burnt sugar, acorns, mangel-wurzel, dandelion, turnips, parsnips, carrots, and rye and potato flours.

Tea.—Exhausted tea leaves (faced or colored and fixed up with plumbago, gum, indigo, Prussian blue, turmeric, China clay, mica, soapstone or French chalk, sulphate of lime, rose pink, Venetian red, carbonate of copper, arsenite of copper, chromate and bi-chromate of potash, and carbonate of lime and magnesia), leaves of the elder, willow, sloe, and other plants and trees, lie tea, paddy husk, sweepings of the tea-house floors, sand, quartz, starch, and magnetic oxide of iron.

Sugar (cane).—Grape or starch glucose, wheat and potato flours, tapioca starch, blood, pipeclay, marble dust, gypsum, bone dust, lead, iron, lime, sand.

Cocoa and chocolate.—Arrowroot, sago, starch, chicory,

ferruginous earths, chalk, oxide of iron, sulphate of lime, wheat and Indian flours, tapioca, cocoa husks, old sea biscuit, potatoes, molasses, and animal fats, such as tallow and lard.

Wheat flour.—Adulterated with inferior or old flour, potato flour, ground beans, peas, rye, barley and rice, alum, chalk, gypsum, soapstone and carbonate of magnesia.

Buckwheat.—Wheat and other flours.

Honey.—Cane sugar, chalk, sulphate of lime, pipeclay, gypsum and glucose.

Lard.—Oleomargarine, cotton-seed oil, potato flour, water, mutton suet, alum (for color), carbonate of soda (for taste), caustic soda (for taste or smell).

Cream tartar.—Gypsum, starch, acid-phosphate of calcium, tartaric acid.

Saleratus.—Most of what is now sold as saleratus is bi-carbonate of soda.

Bi-carbonate of soda, or baking soda.—Gypsum, sulphate of soda, carbonate of lime.

Sugar confectionery.—Glucose, terra alba, chalk, arrowroot, sand, wheat, and potato flour, hydrated sulphate of lime, with—for coloring—cochineal, lake, indigo, and Prussian blue, carbonate of copper, carbonate of lead or white lead, vermilion, gamboge, chromates of lead, sap green, arsenite of copper, Indian red, umber, sienna, Vandyke brown, cobalt, smalt, litmus, Naples yellow, bi sulphuret of mercury, sulphuret of arsenic, bronze powders or alloys of copper and zinc.

Mustard.—Flour, turmeric, cayenne pepper, ginger, plaster of paris, linseed meal, radish seeds, chromate of lead, gypsum, sand.

Oatmeal.—Barley meal, rice and corn flour, ground husks of the cereals.

Wheat bread.—Barley, oat and pea flours, bone dust, carbonates of lime, magnesia and soda, sulphate of copper and lead chromate (for color), alum (for taste).

Cheese.—Oleomargarine, lard, cotton-seed oil, borax, saltpetre, potatoes, beans, soapstone, soda, potash, urine, sulphate of zinc, blue vitriol, arsenic (in foreign cheese).

Butter.—Oleomargarine, cheaper fats, cotton-seed oil, alum, borax, barium, chalk, flour, gypsum, lead carbonate, yellow lead chromate, potato flour, salt, soapstone, starch and sodium silicate or soluble glass.

Arrowroot.—Sago, potato and tapioca starches, and ground rice.

Cinnamon.—Cassia and most of the other spices, flour, meal, and arrowroot.

Pepper.—Ground rice and beans, mustard husk, salt, oil-cake and clay, and for colors red lead, vermilion or bi-sulphuret of mercury, Venetian red, turmeric and charcoal.

Ginger.—Wheat, sago and potato flour, ground rice, mustard-husks, turmeric.

Maple sugar.—Cane sugar, glucose, and flour.

Chicory.—Roasted wheat and rye flour, burnt beans and acorns carrots, mangel-wurzel, roasted biscuit, sawdust, and oak-bark tan.

Sago.—Potato flour.

Vinegar.—Water, with burned sugar for color, sulphuric acid, acetic, hydrochloric, nitric and tartaric acids, cayenne pepper, salt, and mustard seed.

Pickles.—For coloring, acetate of copper.

Sauces.—Chalk and plaster of Paris, and for coloring red earths.

Marmalade.—Pulp of apple or turnip.

Olive oil.—Cotton-seed oil and the cheaper oils of the poppy, peanut, grape seed and beachnut, and coaloil, with lead to correct rancidity and copper for a greenish color.

Brandy.—Water, corn spirits, molasses, burnt sugar (for color). Artificial brandy made from other spirits and flavoring extracts is common.

Gin.—Water, cayenne, flavoring extracts, slum, and salt of tartar (for fining), sulphuric acid, coriander seed, oil of almonds, calamus root, orris root, orange peel, acetate of lead, oil of turpentine, and gray and white salts for taste or smell.

Rum.—Water, cayenne, burnt sugar, and cocculus indicus for taste or smell.

Whiskey.—Principally water, cayenne pepper, bitter almonds, tonka bean, burnt dried peaches, beet root, and a variety of flavoring extracts, sulphuric acid, creasote, and sweet spirits of nitre.

Wines.—Mixtures of inferior wines, cider, and the juices of rhubarb, gooseberries, and pears, with—for coloring—logwood, elderberry juice, Brazilwood, bilberries, burnt sugar, black cherries, and cochineal, and for taste and smell, sulphate of potash, bitartrate of potash, lead, oak sawdust, catechu, cherry-laurel water, carbonate of soda, and artificial flavorings.

Ale, beer and porter.—Water, with, for taste and smell, cocculus indicus, opium, cayenne, ginger, quassia, colocynth, caraway and coriander seeds, orange powder, honey, licorice, sulphate of iron, sulphuric acid, cream of tartar, camomile, alum, carbonate of potash, nitric acid, horehound, blessed thistle, sweet flag, gentian, aloes, molasses, juniper berries, burnt flour, isinglass, albumen, ivory, black gypsum, salt, glycerine, salicylic acid, decoction of calves' feet, glue, copperas, henbane, belladonna leaves, nux vomica, hartshorn, strychnine, tobacco, shavings and oyster shells.

Milk.—Water principally, flour or starch, boiled white carrots, milk of almonds, sheeps' brains, gum tragacanth, carbonate of soda, chrome yellow for coloring.

As medical men we are concerned with the detection and punishment of dishonesty only when its results are injurious to health. It requires no great amount of argument, however, to show that food adulteration is prejudicial to health. From causes which we need not stop to mention the American public has come to be too lenient with the dishonesty which shields itself under the name of "business." Such laws as we have for the protection of health and life are, as a rule, improperly enforced. As self-constituted conservators of public health should we not bring this matter before our legislative bodies—not once, but repeatedly—until this disgrace is wiped out from the country?

Can there be any wonder after reading the above list, that we are a nation of dyspeptics? While it may be said that many of the adulterants of our foods are innocuous, it must be admitted that others, taken repeatedly, even if in small quantities, are injurious—and are certainly not foods in the common acceptation of the term. For example, an enormous quantity of tea is consumed in this country, and a reference to the list will show that tea is more largely and more perniciously adulterated than any other article in such common use, except, perhaps, malt liquors. The consumption of sugar confectionery by children is very large—and the adulterants of this article are by no means harmless. And when it is remembered that milk is the principal food of a very large proportion of the population—young children—who can take no other food, the possible and almost certain injury may well cause us to endeavor, by every possible means, to throttle an evil which is worse than the plague.

NINTH INTERNATIONAL MEDICAL CONGRESS.

The Executive Committee of the Ninth International Medical Congress held a full and harmonious meeting in the Palmer House, Chicago, on the 6th and 7th inst. Full reports were made by sub-com-

mittees and the chief officers of the Sections, which showed a most satisfactory degree of progress in all the necessary arrangements for a large and successful Congress. The several Sections are well organized, and for the most part with arrangements for an abundance of scientific and practical work of importance, furnished in fair proportion by parties of reputation in other countries. The local arrangements at Washington are also rapidly maturing, and include not only the best possible accommodations for the regular work, but a series of appropriate entertainments and probably an excursion for the foreign guests to Niagara Falls and return to New York, after the close of the Congress. An outline of the whole programme will soon be given to the public.

PERTUSSIS IN A CAT.—MR. O. BOWEN, of Liverpool, reports this rare case of infection of one of the lower animals from a human being. The cat was infected by a little boy, and for about two weeks had five or six distinct fits of coughing daily, similar in every respect to those exhibited by the boy, with expectoration of frothy mucus afterwards. Between the attacks the cat was bright and active, though not so much so as before, and lost flesh during its illness.

SOCIETY PROCEEDINGS.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Fourth Annual Meeting, held in the Johns Hopkins University, Baltimore, Md., May 31 and June 1, 1887.

TUESDAY, MAY 31—FIRST DAY.

AFTERNOON SESSION.

The Society was called to order by THE PRESIDENT, FRANK DONALDSON, SR., M.D., of Baltimore, who delivered the *President's Address.*

PROPHYLACTIC TREATMENT OF THOSE WHO INHERIT A PREDISPOSITION TO PHTHISIS.

Thirty per cent. of the cases of phthisis have an inherited predisposition to the disease. The hereditary form, when developed, offers the least prospect of recovery. Reference was made to the pathology of the disease. Five years have elapsed since the contagion of tuberculosis was alleged to have been discovered, and nearly all observers have now confirmed the views of Koch. There is abundant evidence that human subjects readily yield to the bacillus poison when previously they have been in good health. The bacillus is always present in phthisis, and we must accept it as the full explanation of the manifestations of tuberculosis. The disease may be propagated by the inhalation of the dried bacillus from the expectoration of diseased persons, by persons predisposed to tuberculosis. The various theories which had been advanced to explain heredity were discussed. The prophylactic treatment embraces two elements: 1, the improvement of the general health of the subject; and 2, the protection from contagion. The tuberculous mother should not nurse her child, but if possible it should be given to a healthy wet-nurse. The hygiene of the nursery should be looked after carefully. The room should be well ventilated and kept at a comparatively low temperature. The subject should live much out of doors, especially between the ages of 15 and 20 years. The beneficial influence of sunlight should be borne in mind. All causes of glandular irritation should be avoided. Scrofulous glands should be dispersed or removed. The physical form of the chest should be enlarged by gymnastic movements. If possible, life should be passed in a high altitude. Oleaginous fluids are useful if they can be digested. The milk and flesh of tuberculous animals must be avoided, for cooking rarely destroys the bacilli of beef. If the prophylactic treatment is thoroughly carried out, the hereditary proclivity may remain latent and the individual never contract the disease.

DR. B. F. WESTBROOK, of Brooklyn, said that the anatomical and physiological conditions which predispose to this trouble are, according to the results of certain observations, a disproportion between the size of the heart and the lungs, the heart being smaller in proportion to the size of the lung than in the ordinary individual, and a disproportionately small digestive apparatus. The former condition interferes with the circulation at the apices of the lung, while the latter condition causes a lack of nutrition.

DR. JAMES R. LEAMING, of New York, read a paper on

THE PHILOSOPHY OF CLIMATIC TREATMENT OF DISEASES OF THE CHEST.

The author stated that it had been observed that the greatest improvement takes place during the first three weeks of the patient's stay at a new place. The suggestion was made that a line of resorts be established along the Atlantic seacoast. The patient could begin in the summer at the most northern and gradually pass southward, making a stay of a few weeks at each place. Having completed the series, the patient may return, taking the stopping-places in a reverse order. This same plan might be applied to the Pacific coast and to the mountains. The speaker also suggested the propriety of State and municipal authorities furnishing sanitariums for the benefit of those unable to avail themselves of the advantages of existing institutions.

DR. R. G. CURTIN, of Philadelphia, read a paper on

THE INFLUENCE OF SEA AIR ON SYPHILITIC PHTHISIS.

He gave in detail the histories of five cases of what appeared to be syphilitic phthisis in which improvement followed prolonged sea voyages, and in each case the symptoms returned when the patient again took up his residence on land. He was led to

consider the cases observed as cases of syphilitic phthisis, for the reasons that there were no symptoms of chronic pneumonia preceding the attack, that the lung trouble followed syphilitic infection with constitutional symptoms, that the disease was influenced to some extent by constitutional treatment, and that there was no tendency to tuberculosis in these cases. He referred to the observations of Dr. Wm. Porter, who relies upon the following points in reaching a diagnosis of syphilitic phthisis: 1, abundant expectoration without signs of softening; 2, a debilitated condition, without marked emaciation and a rational history of phthisis; 3, pronounced dyspnœa without evidence of cardiac or pulmonic obstruction to the circulation; 4, pain along the sternum and the tibial crests; and 5, the satisfactory response to treatment. Dr. Porter had examined the sputa in 100 cases without finding the bacillus. The speaker was not prepared to say why it was that the sea air proved beneficial in these cases, while in most of the ordinary cases of phthisis residence on the sea-coast was not desirable.

Diseased Conditions for which Sea Air is of Doubtful Benefit, by Dr. Boardman Read, of Atlantic City, was read by title.

Dr. E. T. Bruen, of Philadelphia, thought that it was probable that in syphilitic phthisis the benefit of the sea air is due to its influence on the catarrhal processes. In catarrhal affections of the mucous membranes in general, it has seemed to him that residence at the sea-shore was useful. On the other hand, in tuberculous phthisis it has seemed that the influence of sea air was disastrous. He was led to make these remarks because he found so many patients with phthisis recommended to reside at the sea-shore or to take ocean voyages. He had found that the cases benefited by prolonged sea voyages are those in which there is no inherited tendency to tuberculosis.

Dr. V. Y. Bowditch, of Boston, would make a great distinction in speaking of the sea-coast air and the pure sea air. Cases which could not stand the harsh, cold and changeable air of the sea-coast may be benefited by a sea voyage or residence on an island some distance from the shore, where the conditions are similar to those which obtain in a sea voyage.

Dr. James C. Wilson, of Philadelphia, said with reference to residence at the sea-coast in the treatment of phthisis, that in his experience there are three classes of patients with consumption who cannot go to our Atlantic sea-coast without risk. These are, first, those in which there is active febrile disturbance; secondly, those of a highly excitable and nervous organization; and thirdly, those who suffer from repeated attacks of spitting of blood. Such patients cannot safely reside for any length of time on the Atlantic sea-coast.

Dr. Frederick C. Shattuck, of Boston, said that the author had referred to syphilitic phthisis; that is to say, a destructive process in the lung not due to tubercle, but to the syphilitic virus. It seemed to him to be a difficult matter to determine whether or not there is such an affection. Tubercular phthisis varies so much in its symptoms that the points mentioned could not be relied on. The criterion would be the presence or absence of the tubercle bacillus. The author had referred to Dr. Porter as having examined the sputa from 100 cases of supposed syphilitic phthisis without finding the bacillus. That number is so large for the short time that this test has been available, that it would make us a little doubtful of the methods employed. The fact that the bacillus is not found is no proof that it is not present. The German Committee on the Collective Investigation of Disease studied this matter last year, and came to the conclusion that so-called syphilitic phthisis had no real existence. Both syphilis and tuberculosis are common diseases, and the one offers no immunity from the other, so that we should expect to frequently find them combined in the same individual.

Dr. J. H. Musser, of Philadelphia, had never seen a case of phthisis which he considered of syphilitic origin. He had seen only one case in which the lesions bore any resemblance to what we should expect to find in syphilitic phthisis. This was the case of a young man with syphilis and cirrhosis of the liver due to syphilitic interstitial hepatitis. There were also syphilitic gummata in the brain, and the patient died of syphilitic meningitis. There were scattered through both lungs innumerable miliary granules not at all resembling miliary tubercles. He was unable to find the bacillus of phthisis; but, as has already been stated, the failure to find it is no proof of its absence. He would not call this a case of syphilitic phthisis, but rather a case of syphilis of the lungs.

Dr. E. Fletcher Ingals, of Chicago, had been much interested in the remarks of the gentleman from Boston, but thought that most of the members had seen cases in which the syphilitic nature of the disease admitted of no question. Even if the bacilli are found, it would be no proof that the case nad not originated as a syphilitic trouble and that it had subsequently become tubercular. He related a case in which the syphilitic manifestations were very prominent. There was consolidation of the lungs, particularly of the middle portion of one lung. There was a history of syphilis and distinct cutaneous lesion. The patient had been in Colorado and returned much worse. On his return to a lower altitude, he was put on the use of iodide of potassium, and ultimately apparently recovered.

Dr. J. H. Musser read a paper on

THE TREATMENT OF THE FINAL STAGE OF PHTHISIS.

The paper consisted of a detailed account of the symptoms met with in the last stages of phthisis, and referred to the various measures which he had found useful in these cases. To relieve the high temperature he had resorted to antifebrin with advantage. Quinine was found to act unsatisfactorily.

The President announced as the Nominating Committee, Drs. F. C. Shattuck, E. T. Bruen, Willis E. Ford, B. F. Westbrook, and W. H. Geddings.

(*To be concluded.*)

ST. LOUIS MEDICAL SOCIETY.

Stated Meeting, April 2, 1887.

The President, S. Pollak, M.D., in the Chair.

F. D. Mooney, M.D., Secretary.

Dr. Charles Barck presented a specimen of

ABSCESS OF THE BRAIN CONSEQUENT TO OTORRHŒA.

The patient was a girl, æt. 15; she had had otorrhœa about eight years. It was sometimes worse, sometimes ceased altogether. For the last month she complained of headache on the left side. About three weeks ago the otorrhœa was stopped suddenly at a dispensary, after which she did not go for five days; on the sixth day she had nausea, photophobia, higher fever; the seventh day she became delirious and comatose. Dr. Kay was called in. Temperature was 104° or 105°. He made a diagnosis of meningitis basilaris. The next day the ear ran some and I was called in consultation. I found pus in the external auditory canal, but the walls were so thickened that it was not possible to get a view of the membrane. The mastoid region was swollen and tender. I advised opening of the mastoid process. This was done on March 17. As soon as I had scraped off the periosteum we saw yellow fetid pus escaping from the mastoid process, where there was a big cavity. The next day water thrown into the mastoid came out of the canal. The fever came down, the coma reduced and she began to answer short questions. The discharge of fetid pus was profuse. The next week the patient grew worse and died two days ago. We found that the bottom of the interior of the skull was filled with very fetid pus. The brain did not show any symptoms of inflammation; it was only adherent around the opening of the abscess, which was about the size of an ostrich's egg. In the bone itself you will see here an artificial opening from the outside into the mastoid antrum, showing the carious condition. The pus found its way from the tympanum into the brain.

Dr. J. B. Shapleigh said he was struck with the beneficial effect the operation seemed to have on the disease. Unfortunately he saw the patient too late to get the full benefit of that most important and useful operation. If he had seen the case sooner, he had no doubt that it would have been saved. Even when the temporal bone is already carious, if by the operation free drainage can be had, a cure often results. Its good effect was seen in the amelioration of the symptoms.

Dr. L. Bremer said that it was an old story that the doctor has been called too late. He believed that the doctor might have been called in a half a year ago, and he would have been too late. He does not believe that at any time this condition was accessible to any operation. The abscess was a very old one, probably years old, because it has what is erroneosly called a pyogenous membrane. There is one important point that attaches to the lesion, which has not entered into the consideration of those that observed it. The seat of the abscess is the left temporal lobe; that is to say, that portion of the brain where the impressions of the ear are interpreted; its psychical auditory centre, so-called. A lesion there produces deafness on the opposite side. The clinical history does not say anything about this, and certainly if the child had heard with the opposite ear there is nothing in cerebral localization. There are a few cases on record where after congenital deafness, these parts were found to be in a state of atrophy, just as there are a few cases where after congenital blindness the angular gyrus was found to be atrophied. However, these questions have not been settled.

Dr. Barck had seen the girl only in the comatose state. There is no doubt that she didn't hear very well in the left ear; it was in a diseased condition for the past year. He did not know anything about the right ear. In his opinion, and that of Dr. Bremer, the abscess was an old one, existing probably six years. The opening into the abscess was about as large as a penholder, and was situated opposite a hole just as large in the periosteum. On the posterior wall, and between the two holes was a big piece of cheesy matter, and just around this place were more or less adhesions between the brain and periosteum. His opinion was that there was inflammation of the tegmen at first, and in consequence caries of the bone, and from that abscess of the brain formed, and was during the last few weeks closed around by the adhesions, and then gave rise to meningitis. It did not give rise to any brain symptoms during life other than the headache from time to time.

Dr. Robert Barclay said, concerning the operation of trephining the mastoid, that the danger does not lie in the mastoid, but in the middle ear, and if proper drainage could be had there, there would be no inflammation of the mastoid. The most dangerous form is that which has its seat in the attic, where lies the head of the malleus, and the main portion of the body of the incus. Water splashed up into the mouth of the Eustachian tube frequently causes inflammation of the flaccid portion of the membrane, and the hearing is often good, even where there is intense pain and inflammation. In this the hearing remained to a certain extent in the left ear, which is an important point in such a case. The drumhead was not visible; it is possible that the pus burrowed out between the auditory plate and the flaccid portion and broke through there. The main difficulty is in draining the attic, and it requires skill to do this; it is only $\frac{1}{16}$ of an inch between the middle ear, the brain, the carotid canal, the internal jugular vein, and the internal auditory canal, and the brain lies nearer than the others. It is often difficult to differentiate between acute neuralgia and neuralgia of acute meningitis. This operation of trephining, a magnificent one for aurists, is, I think, often unnecessary, if we will get drainage from the external auditory canal.

Dr. D. V. Dean had had five cases in which he had trephined the mastoid, three of which recovered. They had gone on to mental trouble; the friends of one, a girl of 12 to 14 years, thought she was becoming insane. In one of the two cases that died he

had the opportunity of making a post-mortem examination. He thought trephining was frequently performed when unnecessary, but thought it was quite as frequently neglected. The profession is in part to blame for this fact. The physicians were often, until recently, in the habit of telling the families that the child would outgrow its ear trouble, and it thus came to be the belief of many parents. It is well recognized by pathological anatomists that the *tegmen tympani* and the roof of the mastoid antrum are peculiarly susceptible to certain pathological changes. In this case the necrosis is evidently on the anterior or outer side of the petrous portion, and the roof of the attic is nearly or quite open.

A very interesting case "came too late" literally under his care, which showed beautifully that it is not always the attic or the tympanum at all that is at fault, or from which treatment must be carried out. The soft tissues about and behind the right ear were infiltrated with pus, and the muscles also of that side of the neck. He opened above the external ear into an abscess within the skull containing much pus—the opening through the squamous portion, 1.5 cc. in diameter. The patient died, and he found post-mortem that the whole base of the petrous portion had necrosed and disappeared, except a bridge 1 to 3 mm. wide and 1 mm. thick, supporting the superior petroyal sinus. The opening, therefore, tunneled under the lateral sinus. The cavity also communicated with the external meatus in the upper posterior outer part by an opening 1 cm. in diameter. Below it opened 1 cm. in diameter through the occipito-mastoid suture a little behind the stylo-mastoid, and necrosis and pus encroached upon the jugular fossa. Pus had burrowed and the bone was partly necrosed under the temporal and mastoid muscles down the sterno cleido muscle and the rectus, around the condyle and left side of foramen magnum and the occipito-atloid ligament. There were in the lateral sinus phlebitis and thrombus; a meningitis extended over quite a large area, and yet the whole middle ear was apparently entirely free from destructive disease; and to this day the hammer, anvil and stopes are in place except the long process of the anvil which has been recently broken off.

Dr. Borck believed that in this specimen it could not be clearly made out by which way the inflammation spread into the brain. It may have been through the *tegmen tympani* or along the auditory nerve.

Dr. S. Pollak had had very little opportunity to make such examinations; only once had he trephined the mastoid process, when pus escaped very freely from the opening which we made, and the person recovered very rapidly afterwards. Diseases of the mastoid cells and of the middle ear are much more common than we imagine. In the case he had a few weeks ago there was destruction of the whole mastoid process and the communication between the mastoid cells and the meatus, and yet the patient feels comfortable, although a frightful pathological process constantly goes on.

Dr. W. S. Ford thought Dr. Barclay quite correct in assuming that free drainage is very important in these cases. A patient of Dr. Spencer's had otitis media purulenta chronica. The drum membrane had come away. He had been treating the case for four or five months and regarded it as getting along very well. She had lost her hearing on that side. He was called in to attend to a little disturbance in the neighborhood of the pain. It increased in violence until it was atrocious. There was confusion of thought, anxiety and pain in the mastoid region. Suddenly she was affected with Bell's palsy, which has not passed off entirely yet. Local sedatives had no effect, and he bled her nearly a quart, with the result of immediate cessation of the pain. Dr. Gamble and he had agreed to perforate the mastoid cells, but it got well without it. From the loss of the bones and drum, free drainage was possible, and to this he attributes the failure of the inflammation to extend further.

Dr. F. R. Fry wished to question the statement made by Dr. Bremer, that it could be proven in this case that there were no disturbances of hearing in the opposite ear it would be a severe blow to cerebral localization. Ferrier, in his experiments on animals, proved that when there was disturbance in the temporal lobe on one side, there would be disturbance of hearing on the opposite only temporarily, and there were permanent disturbances only after this region on both sides of the brain had been injured, seeming to indicate the fact that the functions of this region might be vicariously taken up by the opposite side of the brain. At any rate, as Dr. Bremer has said, experimentation, as well as pathological evidence in regard to this region of the brain is unsatisfactory, and the evidence regarding cerebral localization from disturbances in this region is not near as convincing as that from experimentation of the brain.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Ninth Annual Meeting, held in the Hall of the Academy of Medicine, New York, May 26, 27 and 28, 1887.

(*Concluded from page 659.*)

Friday, May 27—Second Day.

MORNING SESSION.

Frank Donaldson, Jr., of Baltimore read

FURTHER RESEARCHES ON THE FUNCTION OF THE RECURRENT LARYNGEAL NERVE: A SERIES OF EXPERIMENTS FROM THE BIOLOGICAL LABORATORY OF THE JOHNS HOPKINS UNIVERSITY.

At a previous meeting he had read a paper criticizing certain conclusions advanced by Dr. F. H. Hooper, of Boston. The conclusions which Dr. Donaldson reached were: That the constrictors do not cease to act under deep narcosis or suspension of consciousness from any cause; that we do not always obtain abduction or irritation when consciousness is suspended; that the abduction was

not reflex and was not dependent on unconsciousness; that it is with weak stimuli that abduction takes place, and the movement passes into adduction as the stimulus was increased; these results invariably followed whether the animal was slightly or deeply narcotized, or when the medulla was destroyed or when local death had taken place. That after stronger continued stimuli the abductor muscles become worn out and did not respond to stimuli.

These conclusions had been strongly criticized and the present series of experiments were performed to test the correctness of the above views. He had shown, that abduction of the vocal bands can be obtained without ether and that it is a physiological fact that opening or closing the larynx depends upon the strength of the stimulus. With weak stimuli abduction was produced, while with strong stimuli adduction was caused.

DR. FRANKLIN H. HOOPER, of Boston, read a paper on

THE ANATOMY AND PHYSIOLOGY OF THE RECURRENT LARYNGEAL NERVE: FROM THE PHYSIOLOGICAL LABORATORY OF THE HARVARD MEDICAL SCHOOL.

The anatomy of this nerve is now complete and exact, but up to a very recent date much confusion existed on this subject. The larynx possesses three functions controlled by three distinct sets of muscles all innerrated by the recurrent nerves. These functions are: 1. Respiration; 2. Sphincter action, which closes the larynx and prevents the entrance of foreign bodies, and plays an important part in expulsive acts; 3. Phonatory action. Stimuli applied to recurrent nerves produces adduction in certain animals (dogs) and abduction in other animals (cats). Only a few experiments have been made in man but as far as they go they seem to show that stimulation closes the glottis. Under ether or profound morphia narcosis, stimulation of the recurrent nerves produces opening of the glottis in dogs. Three hundred and twelve experiments were reported, some of the animals were under the influence of chloral, chloroform, morphia or ether. Under ether, dilatation was produced with weak currents, while contraction could not be produced with even the strongest current. As the dog begins to come out of the ether dilatation can not be induced with any current, while contraction is brought about by currents decreasing in intensity as the effect of ether passed off. A similar effect was observed in one case after use of a large dose of morphia. After small doses of ether stimulation produces two effects: first, vibration, second, closure. Under large doses of ether, four effects were observed, according to the intensity of the irritation: vibration, complete dilatation, mixed movement and closure. After small doses of morphia, chloral and chloroform, stimulation produces the same effects as after small doses of ether.

DR. F. I. KNIGHT, of Boston, saw some of the experiments of Dr. Hooper. In one case he saw a failure to get the ether effect, which was attributed to the size of the dog.

DR. S. W. LANGMAID, of Boston, stated that in one of Dr. Hooper's experiments recently made, the skull was trephined and insensibility produced by pressing a plug against the cortex. In this case dilatation was very marked under stimulation of the recurrent nerve. That is the only case in which he had seen dilatation similar to that which he thought Dr. Donaldson describes.

DR. HOOPER said that he had been trying to get the effect with feeble stimuli which Dr. Donaldson describes but had been unable to do so. The only point on which they disagreed was with reference to the effect of weak stimuli in unnarcotised animals. He had done a number of experiments following the method of Dr. Donaldson, but had not gotten his results.

AFTERNOON SESSION.

DR. WILLIAM C. GLASGOW, of St. Louis, read a paper on

CERTAIN MEASURES FOR THE RELIEF OF CONGESTIVE HEADACHES.

The most severe symptoms in this condition are the pain and sense of constriction of the forehead. If the pain is analyzed it will be found that it is of two kinds. In the one there is a fullness of the vessels, and in the other, disordered nerve action. Both varieties are often due to the same pathological condition of the nasal chambers. During congestive headache if we examine the nose we find the cavernous bodies are full and tense. The degree of tenseness corresponds to a certain extent to the degree of headache. The method of treatment which he had adopted during the past four years had been the local abstraction of blood. A knife is not required, a simple prick is sufficient. In many cases the relief is immediate. The operation may have to be repeated in a month or two. He had seen few cases in which permanent relief had not followed a repetition of the operation from two to six times. The amount of blood drawn rarely exceeds an ounce. A number of illustrative cases were cited.

DR. J. N. MACKENZIE, of Baltimore, said that some years ago he had advised that in acute coryza an incision be made in the turbinated tissues with a sharp pointed bistoury.

DR. C. C. RICE, of New York, said that his experience was somewhat different from that of the author. So far as chronic hypertrophic catarrh is concerned, he had come to look in these cases of headache for hypertrophy over the middle turbinated bone, pressing against the septum. There has not been much congestion but simply contact. In these cases he had used the galvanic cautery, and had not tried to draw blood.

DR. HARRISON ALLEN, of Philadelphia, was more in accord with the last speaker than with the author. The trouble may come from turbinated bones, but he had attributed it to pressure effects. The proper treatment is to separate the parts. He did not hesitate to etherize the patient, and introduce the finger, and push the septum into place. In one case, a lady came to Philadelphia with a complication of disorders.

She had reflex headaches which were so severe as to lead to a fear of mental aberration. On examining the nose the condition referred to above was found and the speaker insisted that the headache was due to the trouble in the nose. He etherized the patient and separated the parts with the finger. The headaches entirely disappeared.

Dr. F. H. Bosworth, of New York, said that it is a fact that in many cases where we find contact between the middle turbinated bone and the septum there are no symptoms that can be referred to this condition. Judging from analogy, we have in no other portion of the body neuralgia caused by the contact of mucous surfaces. In the vagina and in the urethra, we have mucous surfaces in contact. We may, however, safely say that it is a proper course to pursue to put the nasal cavity into a condition as near normal as possible.

Dr. Glasgow, in closing the discussion, remarked that the paper said nothing at all about hypertrophy. No one recommends bleeding for hypertrophies, for these do not bleed. The fullness of the cavernous sinuses is simply the sign of the fullness of the frontal sinuses. It is not the cause of the trouble. He takes blood from this part simply because this is the most convenient place to do it.

A Case of Leucoplakia; Recovery: by Dr. W. C. Glasgow, of St. Louis, was read by title.

Dr. J. Solis-Cohen, of Philadelphia, opened the discussion on

THE TREATMENT OF LARYNGITIS IN PROFESSIONALS WHO ARE UNABLE TO REST.

Sometimes a professional had consulted him with hoarseness, the result of laryngitis, and want to use his voice in a few hours. The best method to accomplish this that he had found, has been the administration of a sharp emetic and then let the patient rest until the time of the performance, sucking pieces of ice and keeping a cold compress to the neck. In chronic laryngitis he had found nothing of the same service as the use of a weak solution of sulphate of zinc, two grains to the ounce, used in a spray apparatus. In the intervals of the play the patient may inhale a little compound tincture of benzoin if he finds that he is hoarse. Another remedy of considerable service is the use of a respiratory with turpentine, terebene, or eucalyptol, or something of that kind. I am, however, not aware of any special method which is adapted to this class of individuals.

Dr. T. A. DeBlois, of Boston, had endeavored to keep up the systematic use of sulphate of zinc, but had found that the hoarseness continues unless the voice is rested. He had occasionally had to treat vocalists who could spare a few hours, and have found excellent results from the use of nitrate of silver, and the most disastrous results from the use of cocaine. There seems to be a certain amount of relaxation following the use of muriate of cocaine. It may be said that in these cases that unless there is rest there is no cure.

Dr. Beverly Robinson, of New York, stated that his experience with the class of cases under discussion would lead him to believe that so far as the acute cases are concerned there are milder measures than the use of an emetic. He had found under these circumstances that the use of tablet triturates of chloride of ammonium repeated as often as once every fifteen minutes is one of the most efficient methods of overcoming the difficulty. For local application he did not think there is anything better than carbolized spray. In the chronic form of laryngitis in vocalists he believed that we could not obtain much information from the appearance of the mucous membrane. In these cases the membranes may be red and this may continue after the trouble with the voice has disappeared. He believed that there the trouble is chiefly in the nervo-muscular apparatus and had found the internal use of good wine of coca, with application of a faradic current to the neck, very useful. The faradism should be repeated once or twice a day.

Dr. F. H. Bosworth held that there is no such disease as larnygitis as that term is used to mean an inflammatory process. The seat of the disease is not in the larnyx but in the nasal passages. If you apply cocaine to the nasal mucous membrane, causing contraction of the blood vessels, and follow this by the use of chromic acid, thus eliminating the cold in the head, it will usually be found that the laryngitis has disappeared. Relaxation has been spoken of as following the application of cocaine. Although he had used the drug in many cases he had seen this result in only two, and they were cases of hay fever. His method of using cocaine is to suspend it in fluid cosmoline and direct the patient to spray the nose and inhale it.

Dr. C. E. Sajous, of Philadelphia, had treated many cases of this trouble. The action of cocaine in laryngitis is pernicious. In cold in the head cocaine is useful but it should not be used within four hours of the time when it is desired to use the voice. In the majority of cases of chronic laryngitis the condition is due largely to fatigue. He had found that the use of quinine and nux vomica internally with the external use of a weak faradaic current are the best measures to employ.

Dr. Morris J. Asch, of New York, considered the employment of muriate of ammonia is useful. He gives it in solution in compound liquorice mixture which contains a little tartar emetic. The chronic cases are more difficult to treat because the patients can not quit work. He had found nothing equal the application of astringents. He had used the spray in some cases, but more good is done by the use of the brush. The solution which he most frequently used was one of perchloride of iron, thirty to sixty grains to the ounce. Where a person has to use the voice in a few hours, a single application will put them in good condition temporarily.

Dr. F. H. Hooper, remarked that in these professionals there is sometimes an alteration in the quality of the voice the result of over-exertion. Here there seems to be want of tension in one vocal cord. To relieve this he had used electricity outside, with the internal use of aromatic spirits of ammonia, thirty to forty drops in half a glass of soda water.

Dr. J. N. Mackenzie thought that Dr. Bosworth

is to a great extent right with reference to the dependence of laryngeal disease on nasal trouble, and that the vast majority of cases of laryngitis are associated with disease of the nasal passages and upon the recognition of this fact depends the successful treatment of many cases of chronic laryngitis. I should never use cocaine just before a person was going to use the throat. The sensation which it produces in the larynx is only next to that of hanging. In the nose the effect is very pleasant provided some of the solution does not trickle into the nose or larynx.

DR. C. C. RICE, of New York, read a paper entitled *Glandular and Connective Tissue Hypertropies in the Lateral Walls of the Pharynx.*

DR. CHARLES H. KNIGHT, of New York, read a paper on

THE GALVANO-CAUTERY IN THE TREATMENT OF HYPERTROPHIED TONSILS.

The speaker first referred to the objections to the cutting operation. The principal of these is the danger from hæmorrhage. At times the tonsil is so deeply situated that it is not possible to get the tonsilotome over it. In other cases the patients positively object to the cutting operation. There are two methods of using the galvano-cautery, one is by puncture and the other by the snare. The former is much the slower. Not more than three punctures should be made at each sitting. The number of sittings required vary from five to ten. The latter method with the snare is much the quicker. The current should be used intermittingly and traction should only be made during the passage of the current. He did not recommend this as an universal operation. In the majority of cases the cutting operation is easier and better. It should be used where there was danger of hæmorrhage, and he was almost disposed to say that the galvano-cautery should be used in all cases of adults.

DR. A. W. MACCOY, of Philadelphia, said that in the treatment of these cases he made a distinction in the methods employed. In the glandular enlargements he had used puncture, while in the interstitial hypertrophies he had not used it, for in these cases you are apt to get cicatrices which give considerable trouble. He was not satisfied that the puncture is any better than chromic acid fused on a probe and passed into a crypt.

DR. BEVERLY ROBINSON had long held that we know of no simple operation in surgery. There is nothing so unpleasant as to have to remove large tonsils from a small child. Although, as a rule, the hæmorrhage is readily controlled, yet he always undertakes the operation with a good deal of reluctance. He was disposed to think that galvano cautery is one of the best methods. We can thus remove many tonsils that give us a good deal of apprehension.

DR. RICE said that very little can be accomplished with the cautery in the large white hypertrophies in children. The cutting operation is what must be done in these cases. In adults, however, galvano-cautery is the most useful measure.

THE PRESIDENT said that he had used the cautery, but a certain amount of soreness has always followed its use. In children, in order to avoid the pain and nervous shock attending the cutting operation, he was in the habit of etherizing the patient and removing the tonsil with the snare.

DR. HARRISON ALLEN remarked that while it may be proper to do the cutting operation in certain cases of hypertropied tonsils which have been selected with great care, yet he thought that we err in making broad statements in regard to this operation. He believed that the number of cases in which serious hæmorrhage occurs is much larger than is supposed. All the disastrous cases are not reported. He was not willing to perform the operation until he had studied the case very carefully. Other measures should be first used and the knife resorted to at the last.

DR. D. BRYSON DELAVAN, of New York, held that where the operation of tonsillotomy is done with proper care and with suitable styptics at hand, there is not much danger from hæmorrhage. At first there is a gush of blood, but in a few seconds this stops. He had found it very difficult to get authentic reports of cases in which serious hæmorrhage followed this operation.

DR. MORRIS J. ASCH, with reference to the question of hæmorrhage, stated that some time ago one of his assistants removed a small section of the tonsil. The next day there was serious bleeding, and it was found necessary to keep up pressure on the tonsil for six hours before it was controlled.

DR. J. SOLIS-COHEN thought that a great deal of the trouble in tonsillotomy is due to the adhesion of the anterior fold of the palate to the tonsil. It has been his custom to first free the tonsil from the palate. In many cases the tonsil will then go down without any treatment whatever. He thought that the hæmorrhage comes from the cutting of this fold, for, as the vessels run in a vertical direction, they are cut obliquely. He had never been able to use the cautery with the success of the reader of the paper. In his cases it has required from twenty to fifty sittings.

DR. BEVERLY ROBINSON, of New York, read a note on

A FREQUENT CAUSE OF NASAL HÆMORRHAGE.

In the experience of the author the ulcerations in atrophic rhinitis had been a most frequent cause of hæmorrhage. He had found himself unable to detach the crusts from these ulcerations either by the use of douches or sprays so well as by the employment of ointments. In the course of two or three days the patient is able to blow out the crusts. The best ointment for this purpose is the ammoniated mercurial of the Pharmacopœia, made with vaseline, one half full strength. After plugging the nostrils, especially in children, he has found flexible probes most useful. He has never found anything to arrest the hæmorrhages so well as sheet sponge, which is cut into long strips and pushed into the nares till the bleeding stops.

SATURDAY, MAY 28—THIRD DAY.

MORNING SESSION.

THE PRESIDENT called the Association to order,

and Dr. S. W. Langmaid, of Boston, read a paper on

CONSTITUTIONAL CAUSES OF THROAT AFFECTIONS.

However important and interesting the morbid changes in the upper air-passages may be locally, the important lesson should be learned that there are underlying constitutional causes which must be removed in order to effect a cure. Syphilis, alcoholism, rheumatism, and gout, etc., are ever at work, and their influence must be combated. Local treatment is in the nature of repair, while constitutional and hygienic treatment must be in the direction of the renewal of normal processes.

Dr. Glasgow, of St. Louis, regarded the paper as one of the most timely which had been presented to the Association. He thought the statement made by Dr. Daly, of Pittsburg, that the laryngeal physician should become a laryngeal surgeon, as one tending to do much harm, and it had done much to retard progress in this department of medicine.

Affections of the Crico-arytenoid Articulation, by Dr. George W. Major, of Montreal; *Cancer of the Larynx*, by Dr. Hosmer A. Johnson, of Chicago; and *A Case of Recurring Laryngitis Hæmorrhagica*, by Dr. C. E. Bean, of St. Paul, were read by title.

Dr. Morris J. Asch reported a case of

STENOSIS OF THE LARYNX

treated by divulsion and systematic dilatation. The opening of the larynx was diminished to one-third its normal size. The dilatation was accomplished by Schroeder's hard-rubber tubes. It was a case of hypertrophic laryngitis below the local cords, and the relief afforded by treatment had been permanent. He preferred this to any other method in this class of cases.

Dr. Cohen had not had the courage to attempt to dilate without preliminary tracheotomy. He believed it was better to perform tracheotomy first, and then pursue the most active measures possible for the relief of the stenosis.

Dr. Knight said that Schroeder's method had been very slowly popularized in this country. He regarded it as a sub-glottic laryngitis of some kind, as had been expressed by Mackenzie, of London, and would discard the name *corditis*, etc.

Dr. Morgan, of Washington, related a case in which he used dilators without permanent benefit, and in which he kept the disease in abeyance by constitutional measures and local applications. He recommended from time to time tracheotomy, to be followed by dilatation, but the patient declined, and finally died suddenly of laryngeal spasm.

Dr. Delavan, believed that the method of treatment by dilatation would receive important modifications by O'Dwyer's method of intubation.

Dr. Asch spoke of some theoretical objections to O'Dwyer's method for the treatment of these cases. He agreed with Dr. Knight that the term *corditis*, etc., should be abandoned. He regarded it as one of the advantages of this method that tracheotomy was avoided.

Dr. D. Bryson Delavan, of New York, then read a paper on

THE ETIOLOGY OF DEFLECTIONS OF THE NASAL SEPTUM,

in which he had gathered the scattered views on the causes, which were generally admitted to be obscure. After discussing the predisposing causes, as race and diathesis, he spoke of the exciting causes under the headings, traumatism, local malnutrition, and occlusion of the nasal passages.

Dr. Morgan, had been able to trace his case to traumatism almost invariably, when the history had been carefully studied. He had seen but few cases in the African, but whether or not this was real exemption he was unable to say.

Dr. Donaldson was also of the opinion that perhaps it was less frequent in the African than among the whites.

Dr. Solis-Cohen had noticed that high-arched palate and deflected septum go together in a majority of cases, perhaps; but he had also seen many cases in which there was deflected septum without high-arched palate, and also high-arched palate without deflected septum. A great many children under *seven* years of age have deflected septum. He thought that the question of traumatism was a difficult one to settle. So also it was difficult to get at the exact influence of racial peculiarities. Over and over he had seen marked deflection of the septum *without* difficulty of breathing.

Dr. Sajous thought that traumatism as a cause could not be clearly defined.

Dr. Mackenzie had not seen a case of deflected septum in the African that required an operation. He regarded *traumatism* as the most prolific cause. He had also been surprised at the brilliant results said to attend some operations.

Dr. DeBlois said that he had observed the nose of several pugilists and had been surprised to find that the septum was in the correct line, while the nose in general had been flattened and bruised with great severity and repeatedly. He thought that these cases could with propriety be regarded as traumatic.

Dr. Roe spoke of several peculiar varieties of deflected septum, and particularly objected to the use of the punch in the treatment.

Dr. Ingals had seen deflected septum in children two years of age, and he had also come to the conclusion that, unless the nasal bones were fractured or cartilages dislocated, deflection of the septum was not likely to follow traumatism.

Dr. Langmaid, of Boston, reported a case of

A PIN REMOVED FROM THE LARYNX,

where it had been for two years. It was sticking through the ventricular band and pointing backward.

Dr. Rufus P. Lincoln, of New York, reported a case of

RECURRENT NASO-PHARYNGEAL TUMOR,

which he had cured by electrolysis. He used a single needle, and made sixteen applications in from four to six days. The growth had not shown any tendency to return.

Dr. W. C. Jarvis, of New York, reported

TWO CASES OF CONGENITAL OCCLUSION OF THE ANTERIOR NARES.

This is a rare condition. He had been unable to find a case recorded in medical literature, and the two reported were the only cases which he had met with in several thousand patients examined at his clinics. They were treated by means of his nasal drills and electro motor. In one case the obstruction was fibrous, and in the other osseous, and the results of treatment were very satisfactory.

AFTERNOON SESSION.

DR. ALEXANDER W. MACCOY, of Philadelphia, read a paper on

A COMPARATIVE STUDY OF SOME OF THE METHODS OF TREATMENT BEST ADAPTED TO THE RELIEF OF OCCLUSION OF THE POSTERIOR NARES

due to hypertrophy of soft parts, and not bony occlusion of the posterior nares, which he had never seen. He referred to different methods, and the difficulties which had been offered in way of reaching the posterior nares, and lack of precision in making applications. Since the advent of cocaine these difficulties, to a certain extent, had been overcome, but the effect produced by the drug rendered comparatively useless certain instruments which heretofore had been used satisfactorily; for instance, Jarvis' snare, the use of which he had ceased, except for the removal of nasal polypi, etc. From the fact that cocaine caused such retraction of the tissues, he had not been able to make use of the needle recommended by Jarvis; but, at the same time, the drug had brought into greater use the galvano cautery and chromic acid. The chief point in the paper was to present the superior advantage offered by a concealed flexible instrument for applying fused chromic acid. He preferred this to all other methods for removing these posterior hypertrophies.

DR. JARVIS regarded his transfixion needle as one of the most serviceable instruments he used for the removal of hypertrophied nasal tissue. He never used cocaine as a preliminary step, but first included the hypertrophy within the loop, drew the wire home, and then applied the cocaine. He regarded chromic acid as dangerous and likely to be followed by unpleasant results. He never attempted to remove a hypertrophy by means of the galvano-cautery.

DR. RICE said that it was often difficult to remove these hypertrophies. He had given up the use of the transfixion needles. There were cases in which it was difficult to apply the loop posteriorly. He had never met with the disadvantages in the use of chromic acid spoken of by Dr. Jarvis.

DR. DONALDSON favored the use of chromic acid, as did his father, who had used it without bad results for many years. As to the needles, technical skill was required for their use, and in one case he had profuse hæmorrhage following their use.

DR. DELAVAN had used chromic acid, discarded it, used it again, and had again discarded it. As for hæmorrhage, he had not seen a case where it could not be controlled readily, and he believed that, practically, there was no danger from it.

DR. JARVIS said that an attempt to remove a posterior hypertrophy, while a deflected septum existed, was very poor surgery. First repair the deflected septum, and the hypertrophy will disappear of itself. He regarded it as trifling with the patient's nostrils to use chromic acid when the hypertrophied tissue can be removed so easily with the transfixion needles.

DR. MACCOY said that he had never been able to reach the posterior face of the middle turbinated bone before his little instrument was invented. A single application of chromic acid was, as a rule, all that was required. In comparison with it, he regarded the use of the needle as a very difficult operation. He never uses chromic acid without immediately antagonizing it.

DR. JARVIS remarked that the fault was not in the needle but in the operator, who failed to make the few simple manipulations necessary to its successful use.

Plaster-of-Paris Dressing for Fracture of the Nose, by Dr. J. W. Robertson, of Detroit, was read by title.

DR. DEBLOIS, of Boston, exhibited a plaster of-Paris splint which he had used with good result in one case of fractured nose.

DR. ROE, of Rochester, exhibited a nasal saw which was operated by means of an electro motor.

The committee on *The Congress of American Physicians and Surgeons* presented its report, which was received and adopted.

The following were elected

OFFICERS FOR THE ENSUING YEAR.

President—Dr. R. P. Lincoln, of New York.

Vice-Presidents—Drs. J. N. Mackenzie, of Baltimore, and S. W. Langmaid, of Boston.

Secretary and Treasurer—Dr. D. Bryson Delavan, of New York.

Librarian—Dr. T. R. French, of Brooklyn.

Council—Drs. Frank Donaldson, of Baltimore, J. Solis-Cohen, of Philadelphia, F. H. Hooper, of Boston, and E. C. Morgan, of Washington.

The following were elected Corresponding Fellows: Dr. A. Gougenheim, of Paris, and J. Moure, of Bordeaux.

Dr. A. Jacobi, of New York, was elected Honorary Fellow.

The Association then adjourned.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, April 7, 1887.

THE PRESIDENT, THOMAS M. DRYSDALE, M.D., IN THE CHAIR.

(*Continued from page 668.*)

DR. J. M. BALDY presented a specimen of

PYOSALPINX IN ITS RELATION TO PUERPERAL FEVER

not simply because it was one of pyosalpinx, but because of its extremely important relation to the puerperal state and, as far as he is aware, because it is the first of its kind ever operated upon, and life saved when the patient was dying from, so called, puerperal fever. The patient, Mamie P., twenty-three

years of age, was delivered of a male child after a tedious but normal labor some four years ago. She was at that time confined to her bed for eight weeks "with an inflammation in her stomach." She however made a good recovery and has not suffered from pain or ache in her abdomen since. On February 3, he was called to attend her in her second labor. Although he went with the messenger he found the labor over; a dead child, together with the placenta and all the membranes intact, lay between her thighs. Her uncovered arms, chest and legs were exposed in a room without a fire. No examination was made but she was put between warm, dry bed clothes as quickly as possible. On the second or third day she had a chill with a quick rise of pulse and temperature, a tympanitic and tender abdomen. These symptoms abated somewhat and he lost sight of her for several weeks. On the third of March, one month after her confinement, he was again summoned to her and found that she had been suffering ever since he had last seen her. She had become so emaciated that he hardly recognized her. Her temperature was 102°F. and pulse 130. She had continued chills and creeps, hectic, night-sweats, and sleepless nights; her abdomen was swollen and tympanitic and intensely painful, her bowels loose and fœtid; micturition and defecation were both painful. She was evidently fast approaching death. An examination of the soft parts showed no sign of a recent tear. The uterus was sub-involuted and on the left side there was a large boggy mass firmly adherent, tortuous and extremely tender. The right side was tender but no mass could be detected. Abdominal section was advised as the only remaining hope of saving her life, and the proposition was eagerly accepted by the patient and her friends. Dr. J. Price saw the patient and confirmed my opinion of immediate operation. He operated on March 5, the delay being necessary to have her surroundings cleansed. Drs. J. Price, McMurtrie, of Danville, Ky., and Mr. Eckman, of Scranton, Pa., were assisting. The right tube and ovary were healthy and were not removed; the left tube was almost as large as the uterus and firmly adherent in all directions, especially to the bowels from which it was separated with great difficulty An abscess of the cellular tissue was ruptured while breaking up the adhesions and pus welled up through the abdominal incision. Both tube and ovary were removed. A large cheesy mass on the bowels at the point of adhesion was trimmed down with scissors and Monsel's solution applied to the bleeding points. After a free irrigation, a drainage tube was put in and the incision, which was only one and a half inches in length, was closed. The tube was found to be distended with pus, the ovary was disintegrated and contained pus. The patient rallied quickly and had no shock. Her pulse fell to 80 and her temperature to normal within twelve hours, and remained so. The tube was removed on the seventh day. There had been little or no pain, no catheter, no laxative or drug of any kind had been employed. The day after the removal of the tube her pulse began to rise as also did her temperature. Pain developed in the left ovarian region and she began to have hectic and cold creeps. About the eleventh day there was a free gush of pus from the tube tract and she began to improve again from that moment. A rubber tube was inserted and passed deep into the pelvis and the abscess was washed out twice daily. The discharge gradually diminished and the tube was again removed. The wound is now completely healed and the patient is a well woman.

The belief that a certain proportion of our puerperal fever cases are simply cases of salpingitis septica is by no means a new one, and is probably held by most of the great operators in the world. Dr. M. Sänger says that "salpingitis septica co-existing with severe puerperal septicæmia has never as yet given the surgeon an opportunity to remove the principal focus of disease by the extirpation of the tubes. It is possible, however, that under certain circumstances such a proceedure might be indicated." Dr. Carl Schroeder holds that "septic endometritis does not extend to the tubes as a rule; occasionally, however, it does go on to a purulent salpingitis." That these cases do exist much more frequently than we have had any idea of is certain, and that oftentimes a life otherwise doomed can be saved by operative interference, is proved by the case presented to-night. Mr. Tait mentions four deaths from this cause in Queen Charlotte Hospital alone, and says "that these cases were, during life, all regarded as puerperal fever." Dr. A. Mastin, out of a total of two hundred and eighty-seven cases, found that seventy resulted from the puerperal state. Dr. Sänger mentions two cases which have come to his knowledge in which the over distended tubes burst and discharged pus into the abdominal cavity with death on the fourth day after confinement in one case, and on the twenty-first day, in the second case. He thinks that in both these cases the salpingitis existed before delivery, and mentions a case in his own practice in which this certainly was the condition. Hecker, as early as 1878, mentions two cases in which the pyo-salpinx was old and was only lit up by the puerperal state. Whether the disease arises *de novo*, or having already existed from other causes is simply lit up by the puerperal state, must be determined in each individual case. Hecker's and Sänger's cases as mentioned, had pre existing salpingitis, but in the seventy cases reported by Martin the micro-organism of puerperal septicæmia were found in the contents of the tubes and no mention is made of any other micro-organism, so it is fair to presume that these cases arose from the puerperal state pure and simple. Of course the possible contagion of gonorrhœa can never be eliminated except by a microscopic examination. In his case, although the trouble seemed very clearly to have arisen at the time of the second labor, possibly with her first also, yet the chance of gonorrhœal infection both before and after her first pregnancy are so great that he cannot pretend to say it was not present. The operation has up to this time been done at least four times in Philadelphia; one case was operated on just two weeks previous to mine by Dr. Longaker, in which a pyo-salpinx was found and removed, the patient dying on the second day. Dr. J. Price has since operated twice, and in

one case found more than a quart of pus in the abdominal cavity. The case, unfortunately, fell into his hands too late and the patient only survived two days. These cases, though few in number, certainly teach us that the work done in this direction is encouraging, and although a large percentage have died, it only warns us of the extreme importance of an early diagnosis and prompt surgical interference. It becomes our imperative duty in every case of post-puerperal trouble to make a thorough investigation of the case on the appearance of the first symptoms, and should a fullness be found on either or both sides of the uterus, accompanied by pain on touch, and with constitutional symptoms of gravity, there should be no hesitation as to the course to pursue. This being secured our present high mortality, of one woman out of every hundred delivered in large cities, as recently stated in a statistical paper on lying-in charities in the United States, must be largely diminished, and the fatal influences now surrounding our parturient women must become infinitely less.

DR. J. PRICE, remarked that the operation in this case was difficult and tedious, and was done with great care. He believes that conception can take place coincident with desquamative salpingitis. Salpingitis, even of gonorrhœal origin, may affect one tube only, and the other, being normal, may give exit to an ovule. Six months ago, he removed a large pus-tube from the right side; the woman is now four months pregnant. If he finds induration and distension of a tube, with inflammatory symptoms during the post parturient period, he does not hesitate to operate at once; the operation involving less danger to the patient than the rapid progress which the inflammatory process will take at that period. He read from a letter from Mr. Tait: "There can be no doubt as to the frequency of the occurrence of puerperal pyosalpinx, and what we want to do, is to hammer at people until we get them to open the abdomen in primary puerperal peritonitis." Dr. Price does not think septic post-partum salpingitis would be unilateral. He would also call attention to the extreme degree of degeneration that has taken place in the tissue of the tubes themselves, and most commonly unilateral only; they are quite cheesy in character. This change could not occur in so limited a space of time, a few days only.

DR. LONGAKER remarked that one of the four cases, referred to by the author of the paper, was a patient who was under his care and who died forty hours after operation. Briefly, the history of the case is as follows: A young woman, from Maryland, came to my office, being in the sixth month of her first pregnancy, for treatment for a profuse mucopurulent discharge having all the characteristics of a recent gonorrhœa. A month later premature labor set in. The child did not live. The placenta came away entire. Four days after labor she began to complain of severe pain in the left inguinal and hypogastric regions, paroxysmal and associated with great tenderness. The tongue was dry, but there was no nausea or vomiting. There was no chill, but the temperature was slightly elevated. The same symptoms continued for the next two days. On the morning of the eighth day, 7 A.M., she began to complain of intense cutting pains, temperature 96.5, pulse 96. Four hours later, under the free use of morphia, the pain was relieved, the temperature had risen to 102° and the pulse to 120. Dr. Jas. Price kindly saw the case with him and they agreed on the advisability of laporotomy. During the afternoon her temperature continued to rise, reaching 104° in the evening. On the following day she was much better, was free from nausea and vomiting and had no severe pain. Owing to this apparent improvement, Dr. Longaker allowed himself to be persuaded to put off operating. The abdomen was opened Feb. 14, 1887, the ninth day after delivery, and nearly sixty hours after the onset of acute peritonitis. General peritonitis and a large quantity of pus in the left region of the left comus uteri, exceedingly foul in odor, were found: the left tube was removed, it was an inch in diameter. The uterus was fairly involuted, it was firmly fixed in the pelvis. The wound drained freely, but incessant vomiting set in and the patient died forty hours after the operation. Is it not assuming too much to say these cases had pyosalpinx before conception? He is sure such was not the case in his patient. Though she had lived irregularly with a man for some five years, she had at no time such symptoms as would lead us to suspect this disease. It would be possible, if pyosalpinx be the consequence of a poison from without, to find entrance to the tubes during the first three and a part of the fourth month before decidua vera and reflexa became firmly united, but the result would most likely be an abortion at the time of the invasion. The morbific matter probably obtains access to the tubes after parturition is completed, and owing to the combined circumstances, acts in an explosive manner. Is not the pyosalpinx originated after labor as the result, it may be, of a gonorrhœa contracted between conception and labor, or before conception?

DR. HIRST presented a specimen from a case of

VIRULENT PUERPERAL SEPSIS,

by permission of Prof. Parvin, in whose service the case occurred. The specimens are interesting, not merely because they come from a case of puerperal fever, which unfortunately is not a rare disease, but from the rapidity with which the disease terminated fatally, and from the possible point of entrance of the septicæmic poison. The history of the case before delivery presents nothing worthy of note. Immediately after delivery the temperature was 99.5° and in spite of the most energetic antiseptic treatmeant of the vagina and uterine cavity, the temperature rose to 102°, but dropped again to 99.5°, only to rise again to 102°, where it remained till the woman's death, about seventy two hours after the birth. The post-mortem examination showed diphtheroid patches in the vagina extending into the cervical canal. The uterine cavity and walls were normal, the peritoneum, tubes and ovaries healthy, the kidneys were the seat of numerous metastatic abscesses, and there were several infarcts in the liver. The lungs were healthy. The rectum was covered

with extensive patches of diptheroid membrane, a very interesting condition, for it indicates the possibility at least, that here was the point of infection, and if this is the case, this specimen at once assumes considerable importance, for he knows of only three such cases recorded in medical literature, one by Winckel, the others by Koester and v. Recklinghausen. These specimens may well serve to call attention to the possibility of infection by the administration of enemata, and to the importance of observing the most minute precautions as to the chemical cleanliness of every instrument that may come in contact with the parturient or puerperal woman.

(*To be continued.*)

FOREIGN CORRESPONDENCE

TAIT AND PEAN.

Dear Dr. Fenger :—On Sunday evening, March 27, I called at the residence of Mr. Lawson Tait in Birmingham. As dinner-time was near at hand, I was invited to remain to meet some of his personal and professional friends. As I had been in training for some time to acquire the proficiency of eating two dinners in rapid succession, I readily consented to avail myself of this opportunity to meet the great laparotomist in the sanctum of his own home. Mrs. Tait is proud of the distinction her husband has attained, and takes a deep interest in his work. I found it quite difficult to keep Mr. Tait in the channel of thought for discussing subjects of professional interest upon which I wished to obtain information. The evening was devoted to social pleasures and the many good things spread upon the table, and I had to submit to the inevitable. During my conversation about my prospective trip to the Continent, I was made to understand that German gynecology was not appreciated in this part of England, and that it had done little or nothing towards the advancement of modern gynecology. If I had met with such an assertion under different circumstances I should not have hesitated a moment to resent most emphatically such an insinuation, and in support of my arguments I should have quoted the results of scientific investigations and conscientious work of such men as Schroeder, Winckel, Olshausen, Hegar, Kaltenbach, Sänger and others, whose names are household words wherever modern gynecology is known and appreciated; but under the existing conditions I had to control my temper and leave the remark unchallenged.

Mr. Tait takes great interest in specimens of antiquity, and his capacious house is one great curiosity shop. That the Tait family is childless became apparent to me by the kind attentions which were bestowed upon a fine specimen of a Maltese cat. In my mind the sight of that cat revived the memory of the useful purpose I had assigned to that brute in my researches in experimental surgery, but as I was aware that Mr. Tait entertains no kindly feelings towards experimenters, I made no suggestions in this direction. It is not necessary for me to give a description of Mr. Tait's personal appearance, as the photograph I sent you some time ago speaks for itself. If you add to the large head, the long and capacious chest and still more voluminous abdomen a pair of short legs, you have Mr. Tait as I saw him.

The next morning at 9 o'clock found me again at Mr. Tait's house, as the operations were to be performed in his private hospital, which constitutes a part of his house. I was shown into a room where a number of physicians had congregated. As we were all strangers to each other, silence reigned supreme until we were informed by one of the nurses that everything was ready. We filed up a flight of stairs and entered one of the rooms, where we found Mr. Tait standing by the side of the anæsthetized patient in his shirt-sleeves and a rubber apron. The temperature of the room was comfortable. A female assistant administered the anæsthetic, and a young physician stood opposite Mr. Tait ready to render assistance, but it soon became evident that his presence was more ornamental than useful, as the operator appeared to require no assistance. The few instruments that I saw were kept in clean pans. The often described bag containing the sponges was hanging from a nail upon the wall, and was taken down and a few sponges thrown in a basin of warm water. The patient's abdomen had not been shaved, and was now sponged off lightly and covered with a rubber cloth with a slit in the centre. The first patient was a lady about 50 years of age, suffering from an abdominal tumor which extended a little above the umbilicus. The abdominal incision was made quickly and was about 2½ inches in length. The omentum was found adherent to parietal peritoneum, and the adhesions were separated by tearing. As soon as the cyst was exposed it was tapped with the blunt fenestrated trocar devised by the operator. This instrument does not cut the tissues when it is pushed through the cyst wall, and consequently extravasation along the side of the tube does not take place, a source of trouble and danger attending the use of all trocars with a cutting edge. The pedicle of the cyst was twisted and appeared like an umbilical cord. The pedicle was transfixed with a long needle slightly curved at the end, and threaded with medium sized Chinese silk which, after the needle was withdrawn, was tied into a Staffordshire knot. The operator showed his unlimited confidence in this method of tying by dropping the pedicle at once in every instance, without examining the cut surface or separately ligating any of the visible vessels.

The immense experience Mr. Tait has had in this manner of securing the pedicle certainly entitles him to speak with authority, and after seeing him tie five pedicles I am convinced of the advantages of the Staffordshire knot over the ordinary methods of tying, and should recommend its general adoption. During the whole operation I observed that the abdominal wound was kept practically closed, either with the cyst, the pedicle, a sponge or the fingers of the operator. This I observed not only in this case but in all of the three cases, and to this circumstance, undoubtedly, a great share of the wonderful success

[1] By permission of Drs. Fenger and Senn.

of Mr. Tait must be ascribed. The operations are done, as it were, subcutaneously, thus reducing the danger from infection to a minimum, provided the hands of the operator, the instruments and the sponges are aseptic, and that this is the case in Mr. Tait's practice I became convinced, and his results only corroborate this statement. Mr. Tait may not be an antiseptic surgeon, but he is certainly, in principles and practice, an ideal aseptic surgeon, whether he is willing or unwilling to acknowledge such a designation. The abdominal wound was closed with four deep sutures. A small gauze compress and a thick layer of cheap cotton, with a wide flannel bandage, constituted the dressing. Time of operation and dressing, twelve minutes.

As soon as the operation was completed, the visitors were requested to retire to the same room, where I spent half an hour in meditation, trying to unravel in my own mind the mysteries which had led this wonderful man to such unparalleled success, when I was aroused from my dreaming condition to reality by another message that everything was ready. The little crowd of seekers for knowledge were led into another room, where we could hardly find time to arrange ourselves around the table when Mr. Tait was already in the abdomen with his bulky index finger, searching for the ovaries. In this case the incision was a mere button-hole. We were informed that the removal of both ovaries and tubes would be done for the purpose of preventing pregnancy in the future, as the patient had suffered greatly during and after delivery on account of a contracted pelvis, including the formation of a vesico-vaginal fistula, which, however, had been cured by operation. Both ovaries and tubes were removed. It was also stated that the patient was suffering from prolapse of the uterus, and this opportunity was utilized and the uterus was stitched to the inner surface of the abdominal wound after both tubes and ovaries had been removed. The whole operation, including the dressing, occupied only seven minutes. I forgot to mention before that the dressing is first fastened upon the abdomen with numerous strips of adhesive plaster which overlay each other, and embrace about two-thirds of the circumference of the body, over which another cotton compress is applied, and retained with a broad flannel roller.

To me the indications which had led to the removal of the ovaries and tubes in this case afforded abundant food for serious thought. There can be no question in my own mind, and in the mind of any one who has the well being and happiness of his fellow-beings at heart, that it was not desirable that this woman should again be exposed to the dangers of another pregnancy, but as a practical American it occurred to me that it would have been wiser to resort to the less hazardous procedure of unsexing her husband, which would have certainly secured the same immunity at a minimum risk to life, and morally would have been more justifiable. This poor creature had suffered untold agonies, and why submit her to such a serious operation to procure sterility, when the same object could have been reached without any danger to life by unsexing the other party?

The third operation was set for 12 o'clock. I was told the evening before that this patient was probably suffering from a pelvic abscess, and I was exceedingly anxious to see the operation devised by Mr. Tait for the radical cure of this often intractable affection. The abdomen was again opened by an incision only sufficiently large to introduce two fingers. A brief digital exploration resulted in the announcement that the swelling in the pelvis was not an abscess, but a small fibroma of the uterus. As it was claimed that this tumor must be the cause of the recurring attacks of pelvic inflammation, it was decided to again remove the uterine appendages. One of the ovaries was adherent, and required more than the usual length of time for its removal. Duration of operation and dressing, nine minutes. The explanation of the cause of the pelvic inflammation was new to me, as I had always entertained the idea that submucous and interstitial myo fibromata of the uterus, even when of large size, seldom give rise to inflammation of the adjacent or contiguous tissues, but for the sake of the patient I hope that the interpretation of the case was correct, and that the operation will be the means of preventing future attacks, as the patient who has lost one of her most important organs is certainly entitled to an equivalent of happiness in another direction.

From what I gleaned from my observations in the practice of Mr. Tait, I have come to the following conclusions: 1. He is a skilful and dexterous operator. 2. He depends on a diagnosis by digital exploration in the majority of cases. 3. He removes the ovaries and tubes in cases for indications which few gynecologists would be willing to accept as justifiable for such a serious procedure. His wonderful success may be attributed to: 1, aseptic surgery; 2, small incisions; 3, no unnecessary exposure of peritoneal cavity; 4, perfect familiarity with pelvic and abdominal surgery as far as the mechanical performance of operations is concerned; 5, rapid operating; 6, careful personal supervision in the after-treatment. There can be no question that much of his success also depends on the fact that he performs his operations almost without assistance, and in this respect all laparotomists should lose no time in imitating his example. With all his faults, Mr. Lawson Tait has done much towards the advancement of gynecology, and we may learn from him many a valuable lesson which will add to our success in practice.

I arrived in Paris via London, Dover and Calais, March 29. My principal object in visiting Paris was to see some of the abdominal work of Péan. In the evening I called at his residence, but failed to see him, as he had gone out to make his evening visit. In the absence of her husband Mrs. Péan kindly invited me to attend his operations next morning at the Hôpital, rue de Sarlé, where most of his abdominal operations are performed. The next morning at 9 o'clock I met him at the hospital, and was fortunate enough to see him perform two of the most difficult operations in surgery during the forenoon. Péan is a large man, with black hair and side whiskers, and is 58 years of age. His face shows intelligence and determination, and his whole appearance indicates a

man of superior knowledge and great courage. As soon as I entered the operating room my attention was attracted by the display of numerous instruments; the number of large and small hæmostatic forceps could not be counted, but there must have been at least more than a hundred. Usually he has four assistants. The operator wore a fur-lined vest and rubber apron. The operating-room is quite small, and was not specially heated for the operations. Chloroform is used exclusively as an anæsthetic. Only five visitors were present at this operation, which gave us a good opportunity to follow every step.

The first patient was a woman about 35 years of age, who had been suffering for many years from a myo fibroma of the uterus which at present reached above the umbilicus. Shaving and disinfection with a sublimated solution (1–1000) was done by Péan himself after the patient was under the influence of the anæsthetic. During the operation the sponges are in the hands of two sisters; one of them washes them in warm water, while the other wrings them out of a 1–1000 solution of corrosive sublimate and hands them to the operator or one of his assistants. The instruments are all immersed in a 5 per cent. solution of carbolic acid, and the hands of the operator and his assistants are thoroughly washed and disinfected before the operation. During the operation the abdomen of the patient is covered with a rubber cloth with a slit in the centre. The incision through the abdominal wall extended from above the umbilicus to the pubis. Before opening the peritoneum all hæmorrhage was carefully arrested with forceps, which were allowed to remain. On opening the peritoneal cavity to the full extent of the wound the tumor came into view, but could not be delivered through the wound by manipulation, and the operator transfixed it from side to side with a large, stout curved needle supplied with a handle, which gave him an opportunity to make traction at the same time one of the assistants made compression of the abdomen from behind in a forward direction, and the combined forces readily brought the tumor out of the wound. The broad ligament on each side of the tumor, with the enormously distended vessels, was compressed with two forceps and divided between with a pair of scissors. After reaching the base of the tumor in this manner on both sides, an elastic tube was applied and kept in place at the point of crossing with a pair of forceps. As soon as the abdomen was opened an assistant protected the omentum and bowels with a dry towel which had been rendered aseptic by boiling in a sublimated solution; this precaution is kept up during the entire operation, so that none of the abdominal contents are brought into view. These towels are used whenever it becomes necessary to protect the peritoneal cavity, and sometimes several are in use at the same time, and when they become saturated with blood they are changed.

During the whole operation the operator sits between the patient's legs, a position which certainly offers great advantages in operations upon the uterus which are necessarily prolonged. After the elastic constrictor was applied the tumor, which was composed of many portions, was removed in large slices with a large amputating knife, and whenever hæmorrhage occurred it was at once arrested by applying the large compression forceps. At times at least twenty-four forceps could be counted in the abdomen. When the base of the tumor was reached the bladder came into view in front, and injury to its walls was carefully avoided by ascertaining its exact position by means of a catheter. In tying the short pedicle, composed of the uterus itself, a large, blunt, curved needle, mounted on a handle, was passed on each side of the uterine canal, and the double ligature cut as the needle was withdrawn; this left four ligatures in two tracts. The outer portion on each side was tied with one of the ligatures which secured the large vessels on each side of the uterus, and the central portion was secured by tying two of the ligatures in front and behind. The remnants of the tumor above the ligatures were carefully dissected out, the mucous membrane of the uterine canal excised and the canal closed with deep silk sutures, all visible vessels were carefully tied with catgut, the surface cleansed, closed and dusted lightly with iodoform. The cut surfaces were brought into accurate apposition by suturing the muscular tissue with silk sutures, and finally, a row of catgut sutures for the peritoneal cavity. No hæmorrhage was observed after removing the elastic constrictor, and the operation was almost bloodless. The pedicle was dropped into the abdominal cavity, and after a careful cleansing of the wound it was closed in the usual manner. The wound was covered with a compress of sublimated gauze which was fastened with strips of adhesive plaster, over which a thick layer of absorbent cotton and flannel bandage was placed. The operation lasted two hours, and as the room was only moderately warm, it was not surprising that the patient showed some symptoms of collapse, from which, however, she recovered a few hours after the operation. Péan can well be called "master of forceps," and although he may carry the use of forceps to extremes, there can be no doubt that a full supply of such hæmostatic forceps as he uses will be of great use to the surgeon in performing bloody operations, and a source of comfort in times of greatest need, when troublesome and sometimes almost uncontrollable hæmorrhage stare him in the face. Péan shows no fear of blood, as he has full confidence in his forceps, which are often allowed to remain in the wound when ligation appears difficult or impracticable.

After this operation was completed a woman was brought in who had suffered for years from excruciating pelvic distress which had failed to yield to the usual treatment. The question presented itself whether the ovaries should be removed to bring about the anticipated climax, but, as Péan had failed in many instances to obtain the desired result by such a procedure, he has in a number of instances resorted to vaginal hysterectomy, and with better success. After the patient was under the influence of the anæsthetic the parts were disinfected, and the operation made with the patient in the exaggerated lithotomy position. The vagina was distended with two flat retractors, and the uterus drawn down with a

vulsellum forceps. The circular incision, through the mucous membrane, was made with a scalpel, and the tissues around the uterus seized step by step with compression forceps, and the dissection made with scissors, fingers and blunt instruments, almost bloodlessly. At first the Douglas cul-de sac was opened, and an attempt made to retrovert the uterus sufficiently so as to bring the fundus through this opening; this, however, failed. Next, the peritoneal cavity was opened in front of the uterus and the uterus was brought out through this opening. The round and broad ligaments were secured with forceps. After the uterus was removed, almost without the loss of a drop of blood, about twenty forceps occupied the vagina, and were allowed to remain. A few small pieces of sponge, secured with a string and dusted with iodoform, were introduced along with the forceps. The forceps are allowed to remain for twenty-four hours, when they are removed. It is said that secondary hæmorrhage never was observed after performing vaginal hysterectomy in this manner. The operation lasted an hour.

The next day I had an opportunity to see another supravaginal hysterectomy at the same place. The tumor reached to the ensiform cartilage and displaced the viscera in an upward direction. The patient was about 40 years of age, and had become quite anæmic from repeated losses of blood. The tumor was irregular in contour and presented a nodulated surface, owing to numerous small subserous myofibromata. The abdominal incision in this case extended the whole length of the linea alba, and the tumor was lifted out from the abdomen with the same instrument. Copious hæmorrhage took place from the punctures, which was promptly arrested by compression with sponges. The remaining steps of the operation were the same as in the first case, and the time occupied in its completion was two hours.

Péan is an untiring worker. Endowed with a vigorous body and an active brain, he finds no pleasure in rest. His voluminous works testify to his zeal and fertility as a writer, and the clinical material they embody shows an amount of personal experience seldom acquired by a man of his age. I was informed that frequently he performs from six to seven operations during a forenoon at the Hôpital St. Louis. Perhaps one of the best evidences of the high esteem in which he is held in the hospitals with which he is connected, is that his aged assistants submit humbly to his frequent and noisy scoldings, and that he is permitted to swear, and swear as only a Frenchman can, in the presence of the sisters, who evidently fail to appreciate that part of the performance, and who lose no time to do all they can by way of repair in silent prayer. Very sincerely your friend, N. SENN.

MISCELLANEOUS.

HEALTH IN MICHIGAN.—For the month of May, 1887, compared with the preceding month, the reports indicate that the cholera morbus increased, and that pneumonia, influenza, rheumatism, bronchitis, consumption of lungs, and tonsilitis decreased in prevalence. Compared with the preceding month, the temperature in the month of May was much higher, the absolute humidity was much more, the relative humidity was about the same, the day and the night ozone were more. Compared with the average for the month of May in the nine years, 1879–1887, intermittent fever, remittent fever, consumption of lungs, scarlet fever, diphtheria and diarrhœa were less prevalent in May, 1887. For the month of May, 1887, compared with the average of corresponding months for the nine years, 1879–1887, the temperature was higher, the absolute humidity, the relative humidity and the day ozone were more, and the night ozone were less.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of May, 1887, at thirty places, scarlet fever at thirty-two places, typhoid fever at four places.

Reports from all sources show diphtheria reported at five places more, scarlet fever at seven places less, typhoid fever at four places less, measles at fourteen places more in the month of May, 1887, than in the preceding month.

COLORED NURSES.—The Atlanta University has established a training school for colored nurses, a much needed institution.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 4, 1887, TO JUNE 10, 1887.

Major B. E. Fryer, Surgeon, granted two months' leave on account of sickness, with permission to apply for an extension. S. O. 28, Div. Pacific, May 2, 1887.

Major B. E. Fryer, Surgeon, granted sick leave for one month. S. O. 28, current service Div. Pacific, amended by S. O. 29, Div. Pacific, June 2, 1887.

Major W. S. Tremaine, Surgeon, sick leave still further extended two months, on account of sickness. S.O. 129, A. G. O., June 6, 1887.

Capt. Paul R. Brown, Asst. Surgeon, granted leave of absence for four months. S. O. 126, A. G. O., June 2, 1887.

Capt. A. H. Appel, Asst. Surgeon, granted leave of absence on surgeon's certificate of disability for six months. S. O. 127, A. G. O., June 3. 1887.

First Lieut. Leonard Wood, Asst. Surgeon, ordered for temporary duty at Ft. Huachuca, A. T.; relieved from duty at hdqrs. Dept. Ariz. S. O. 126, A. G. O. June 2, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING JUNE 11, 1887.

Surgeon W. K. Van Reypen, ordered June 8 for examination preliminary to promotion as Medical Inspector.

Medical Inspector Somerset Robinson, ordered June 20 before a Retiring Board convened at Mare Island, Cal.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDED JUNE 4, 1887.

Surgeon C. B. Goldsborough, detailed to represent the Service at the meeting of the American Medical Association at Chicago, Ill., June 6, 1887. June 1, 1887.

P. A. Surgeon C. E. Banks, when relieved to rejoin station at Boston, Mass. May 23, 1887.

Asst. Surgeon Seaton Norman, when relieved to rejoin station at Cape Charles Quarantine. May 26, 1887.

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ADDRESS IN SURGERY.

TRACHEOTOMY AND INTUBATION — PERITONITIS.

BY H. H. MUDD, M.D.,

OF ST. LOUIS.

Read by Title, at the Thirty-Eighth Annual Meeting of the American Medical Association.

The increased power conferred upon the surgeon by the developments resulting from Listerism, has wonderfully enlarged the sphere of his action. In deed so widely recognized is this power and so attractive the outlook, that nearly every physician has become a special surgeon, and to day there is no specialty so neglected as that most valued and essential one of internal medicine. The science of Surgery is being so rapidly advanced, and the changes are so radical, that it would be impossible to present to you those which commend themselves to an individual judgment. It would weary and but little profit you to listen to the long list of surgical proceedures which are new, or are debatable ground. The seeming perfection of many of our operative procedures leaves apparently little to be desired. Yet so rapid are the genuine advances, that the text books of the day are old on the morrow, and need revision before the printer's ink is dry on their pages. The medical mind of to day has broken away from the trammels of the dogmas, and the traditions of the past. Sometimes it finds sorrow and trouble in its wanderings, and returns to the principles recognized by the Fathers in Medicine. At other times we find much comfort and great congratulation in our new achievements.

The physiologist and experimentalist are now as fully appreciated by the surgeon as is the anatomist. The anatomist guides the hand, while the experimental physiologist tells of new regions to be explored, and new possibilities to be attained by the surgeon. The flood of light and the maze of facts presented to us by the physiologist, the pathologist, the experimentalist, and the practitioner, is so great that an active brain and an energetic body must be ever at work winnowing, assorting, and arranging the facts and theories which guide the work of the day.

The shrewd guess and the daring operation of to-day is the science of the morrow.

The surgeon in entering hitherto unexplored regions demonstrates new physiological laws and makes possible more daring operations. He garners from every field, and tests the knowledge thus obtained in the crucible of experience. The surgeon, then, must be a scientist, and it is a great comfort to every practitioner to recognize the fact that his work is becoming more precise. Diagnosis, prognosis, and therapeutics are each day becoming more accurate. In other words the opportunities for applied science are daily increasing. There is no problem more complicated or one that requires greater mental acumen, or more physical energy and endurance than the proper adjustment of the means to the end in the practice of medicine and surgery. The man who can accomplish this is as truly scientific as he who delves among the abstruse problems of astronomy or anthropology.

The recognition of disease and its treatment is but part of our work, for its etiology is also sought in our appeal to the profession of the world through the Committee for the Collective Investigation of Disease. The Committee of the British Medical Association, through Mr. Henry Butlin, reports that, to use his own words: "I confess that when I first proposed the subject of inheritance of cancer, for collective investigation, it was with a very small belief in the reality of inheritance. I am forced to own that the mass of evidence that has been accumulated by the inquiry has led me to take a different view. Our returns show that there was a history of Cancer in the direct line of descent in 20.60 per cent. of the cases, and if only the fathers and mothers of the cancerous patients are considered, that there was a percentage then of no less than 16.84." Again, to quote from the report, "The impression of Prof. Humphrey, that large eaters, and especially large meat eaters, are particularly liable to Cancer, does not seem to be supported by the information obtained by this committee."

These and kindred subjects involve great knowledge and research, and vast as is the knowledge at command, and precise and exact as are many of our methods, it should be clearly recognized that all surgical rules have their exceptions, and the surgeon is not a carpenter, who with his square and compass at hand works upon inert material which responds always and ever the same to the saw and file. The results in surgery are not always assured, even when the procedures are well considered. What wonder, then, that we, in our vain endeavor to harmonize development and life, with disease and decay find many mooted points for discussion?

It would be strange if workers so persistently en-

gaged did not contribute to scientific facts to other departments of knowledge. Surgeons not content with applying knowledge gained from other fields, contribute through the perfection and the accuracy, and the thorough appreciation of every detail of their work, truly scientific facts to the sciences of biology, bacteriology, physiology, pathology, and even anatomy. Scientific practice stands as an entity, worthy of the devotion of the scientific mind.

Many surgical diseases which have long been with us receive routine treatment, which it is becoming evident is erroneous. So it is with some of the so-called advances of the year which must be accepted with a doubt and rejected after a trial. Individual judgment is all powerful with us yet, and practice is as varied as the surgeon and the patient.

Hence in stating my view to day of points in practice, I shall no doubt clash with some of you. Let it not then be understood that, however earnest I may be in stating my convictions, I regard or ask you to accept as final, any expression of mine on matters of practice ; and if I state too strongly any point, it is the earnestness of conviction, and not the dogmatism of intolerance that causes me to speak forcibly.

Patients and surgeons are not the same from day to day. It has been well said, "The privileges of a wise man, is to make mistakes—only fools are perfect, (perfect fools)." The dull and stupid surgeon is the only one who is satisfied, and is surely right in following rules.

It is not to the rare and brilliant procedures of surgery to which I invite your attention; but rather to the common and frequent diseases. I shall endeavor to discuss two subjects that are now undergoing the test of experience. These subjects are alike important to the physician and to the surgeon.

I ask your attention first to *Tracheotomy and Intubation for Diphtheria and Croup*, and then to the subject of *Peritonitis*.

TRACHEOTOMY AND INTUBATION.

The question of Tracheotomy or Intubation has been on trial and I think progress has been made in the treatment of the laryngeal stenosis, which so frequently accompanies diphtheria and croup. The progress of the past year or two in the solution of this very difficult problem is shown in the disposition to give prompt and early relief to the obstruction, rather than in the introduction or revival of intubation. Diphtheria and croup are always with us, and are so destructive to life that many physicians assert, the one that diphtheria, the other that croup never gets well, and that operative interference is of no avail. Yet patients recover from either or both diseases. Culpable is the man who recognizes this fact and stands at the bedside of the little sufferer and waits for nature to relieve it from the laryngeal obstruction. The history of laryngeal diphtheria, is that the obstruction is progressive, and becomes severe enough to demand relief on the fourth or sixth day; and failing to obtain this relief, soon ends life. I can well see how practitioners vary much in their estimate of the virulence of the diseases which produce laryngeal stenosis ; but I can not find any excuse for one who will permit a child to die from mechanical obstruction, no matter what disease originated it, or how fatal that disease may be in its tendency.

Some of you may think it unnecessary to dwell on this point; but I am sure there are many here who have seen children die from this obstruction, before the disease producing it terminated life. Tracheotomy is not a pleasant operation, and many shrink from it ; it is performed for a disease progressive and fatal in its tendency. The results are not brilliant, and there is nothing to induce the surgeon to urge the operation, except humanity and the positive knowledge that lives are thus saved. Statistics are not always reliable, and especially will they vary from year to year in the mortality of different epidemics of diphtheria. Nevertheless, I venture to present some statistics taken from the records of our private office, for I think they illustrate and demonstrate an important point which I wish to emphasize. It is, however, possible that the great improvement in the results of the last few years have been due to the fact that the patients have very generally been subjected to repeated doses of corrosive sublimate by the attending physician before it was necessary to operate. Some practitioners assert that the surgeon has been displaced by the use of corrosive sublimate. I believe, however, that all who consider the circumstances under which these statistics were collected will admit that the gradual improvement is due to the fact that the operation during the later years was not withheld from the patient until such changes were induced by the long continued obstruction as to lead to fatal results, without reference to the primary disease.

I was associated for many years with the late Dr. John T. Hodgen, who was one of the staunchest advocates of tracheotomy. The records of our office for the past thirty years show 170 cases of tracheotomy for diphtheria and croup, with 46 recoveries, or a percentage of 26.9. The record of the operations by Dr. J. T. Hodgen begins in 1856, and ends in March, 1882. He made 14 consecutive operations without a recovery in the early part of its trial. In the period ending March, 1877, he had made 70 operations with 9 recoveries. During the last five years of his life, ending in 1882, he made 21 operations with 6 recoveries. My record begins in 1872, and with the close of 1883, out of 42 cases there were 12 recoveries.

1884—4 cases; 1 recovery.
1885—3 cases; 2 recoveries.
1886—22 cases; 11 recoveries.
1887—3 cases; 2 recoveries.

And from January, 1884, to date, 32 cases with 16 recoveries; or a total of 28 recoveries out of 74 cases, beginning in 1872 and ending with present date.

My brother, Dr. Harvey G. Mudd, has had 6 cases with 3 recoveries. This makes a total of 171 tracheotomies with 46 recoveries.

The statistics show a progressive improvement in the results, attributable, I believe, in great part to the fact that the class of cases offered to the opera-

tor is better than in former years. The operation is not so often postponed until death is imminent, and yet these cases are such as demanded the operation because of the severity of the symptoms of obstruction. In only two of the whole number of cases was tracheotomy performed before the obstruction was sufficiently urgent to demand relief. One of these two died from the virulence of the diphtheritic process, and the other recovered after wearing the tube for twenty days. The indications demanding tracheotomy or intubation in diphtheria or croup are plain. The labored respiration is preceded by a slight or well-defined hoarseness, and is interrupted by suffocative attacks, accompanied by violent and labored muscular efforts to obtain air. If these attacks recur and are violent, it makes necessary earlier operative interference. If the stenosis rapidly increases, the demand is much more urgent with the same degree of obstruction than if slowly progressive. The steadily increasing difficulty in respiratory movements is evinced not in the rapidity of the movement, but in the muscular effort displayed. Inspiration excites the trapezius, the sterno mastoid, the laryngeal, the inter scapular muscles, the intercostals, and above all the diaphragm, to violent effort.

A labored expiratory effort in which the abdominal muscles are rigid and contracted, accompanied by depression of the supra-sternal tissues and the sharp pitting at the ensiform cartilage, is the most evident sign of laryngeal stenosis. The child keeps the body straight, and is inclined to throw the head back, producing slight orthopnœa. The face, at first flushed, soon becomes pale and dusky, with blueish lips. How very different is the appearance when respiration is insufficient from deposit in the bronchi. Here respiration is more rapid and superficial, and the pitting of the epigastrium and of the supra sternal tissues is less marked. The skin is livid, and the eyes listless and with dilated pupils. Diminished vesicular respiratory murmur is present in either case, and before effusion into the bronchi occurs. The first group of symptoms is urgent in its demands for relief; the latter does not demand operative interference, for the conditions cannot be so relieved. Yet the two conditions are sometimes combined, and it is almost impossible for the surgeon to say of a given case, "It is hopeless," for recoveries from the most desperate conditions sometimes follow operations. There are many conditions when the surgeon may stand by and watch for the progress of the case to relieve him of the need for operation; but laryngeal stenosis is not one of them, and no child should be permitted to die without the relief afforded by tracheotomy or by intubation.

Tracheotomy is, in my opinion, the better, the safer operation, and I believe time will attest its value as a therapeutic measure, and make clearer its importance to the profession and the public. The statistics here presented result from its use in many different epidemics, and where it was permitted as a last resort—yet the percentage of recoveries is more than one in four; or, to be exact, 26.9 per cent.

My experience with intubation has not been very extensive; but sufficient to lead me to believe that intubation, though more readily performed, is not less dangerous. Consent can sometimes be gained for it when for tracheotomy it would be denied. It is perhaps admissible where, in the absence of urgent symptoms, tracheotomy should not be urged or permitted. Tracheotomy prevents the development of bronchitis and bronchial pneumonia, which is consequent upon the congestion and effusion which results from the obstruction. Intubation develops a bronchitis and pneumonia of its own, as a result of the influx of fluids in the necessary effort of deglutition. A large number of those who have been subjected to this operation have died from this broncho-pneumonia before the fatality of the diphtheria could assert itself. In my limited experience, I have had one case in which the tracheal and bronchial catarrh was so profuse as to become exhausting and in itself dangerous. Another, in which the child repeatedly ejected tubes of different sizes, until its vitality, from the dyspnœa of recurring obstruction, was nearly exhausted. A third in which detached membrane obstructed the tube and suffocation was imminent. A fourth in which the tube was ejected and another physician made a tracheotomy. Two cases in which recovery followed a subsequent tracheotomy, and in which I am satisfied the patients would have died if continued reliance had been placed on intubation.

Dr. O'Dwyer has given a very fair exposition of the advantages and difficulties attending intubation; but I cannot agree with him that his "long tubes are likely to prevent plugging of the tubes by detached membrane, or that the tube is easily expelled when plugged by portions of membrane." It is my observation that when the membrane once extends into the trachea, it extends throughout its length, and the presence of a laryngeal tube will not prevent this extension.

Experience and reason tell me that the tube is much more frequently expelled by cough where there is no tracheal or bronchial obstruction than where one of these exists. The expulsive force is better applied, and the muscular power greater, than where such a process has advanced down the trachea and into the bronchi. (Vol. iv, Handbook of Medical Sciences.)

The long tube, I believe, gives an opportunity to start expulsion by bending the neck, thus loosening it from the larynx. The limited motions of the cord, the infiltration of the tissues of the larynx, and the paralysis of the muscles occasionally demand a long continued use of the tube which is incompatible with the life of the patient, since deglutition and nutrition are attended with difficulty while using it.

Tracheotomy. on the other hand, rarely interferes with the nutrition of the patient. Fluids as well as solids are taken readily when other symptoms permit, and the nutrition of the patient, the most important element in the treatment of diphtheria, is not disturbed. The trachea is exposed, and can be more readily cleansed of membrane. The lumen of the trachea tube is larger and favors the expulsion of membrane, and if, in expulsive effort, it should become blocked, any nurse, no matter how ignorant, can remove the tube, and respiration will ordinarily

be maintained through the larynx or tracheal wound until the surgeon is called. The operation is not so easily performed as intubation; but it is not more dangerous, and should be accomplished in from five to twenty minutes. I do not know of any more trying or disagreeable operation than tracheotomy when the demand for relief is urgent; but I firmly believe that it offers a better chance for curative influence than intubation. When a surgeon skilled in the operation is not at hand, no one should shrink from the operation if the obstruction is marked.

In estimating the value of tracheotomy in diphtheria, I hope all will remember that it is performed for one of the most fatal and desperate of diseases, and only for the severer forms of the disease. The greater and more marked is the triumph when success is attained. Like ovariotomy, its statistics will improve as the recognition of its necessity is earlier appreciated, though its results in diphtheria will never equal the marvellous records of ovariotomy. They are sufficient to appeal to every physician for its employment before the child reaches a moribund condition. The gradual diminution of the tidal wave, the increase of the residual air, and the consequent congestion of the mucous surface, with its attendant bronchial effusion and catarrhal pneumonia, will not then add to the gravity of the case.

The apparent results of tracheotomy would, I believe, be vastly improved if it were applied to such cases as I suspect have been utilized for intubation. Yet I wish to emphasize the fact that tracheotomy should not be made until there is a marked recession of the supra- and sub-sternal tissues during inspiration, followed by a forced expiratory effort. This muscular effort is incompatible with very rapid respiration; but it indicates a local, usually laryngeal obstruction to the respiratory movements. The rapid respiratory movements which are found in children suffering from pneumonia, from capillary bronchitis, and from the deposit of diphtheritic or croupous membrane in the bronchi, is very different, though often mistaken for that slower but more labored respiration of local obstruction. Occasionally the two conditions are combined and the differential diagnosis is impossible.

I think Dr. F. E. Waxham has improved the gag of Dr. O'Dwyer, and improvements in the instruments used in intubation may render it still more useful; but as yet it cannot compete with tracheotomy where there is need for operative interference. Tracheotomy gives fresh air to the lungs, and if care be taken to moisten and warm this air, there is practically little danger of serious bronchitis or pneumonia, and there is less danger of the extension of the membrane downward, than if the respired air first passed over the foul and diseased mouth and pharynx. This, I believe, is no small factor in favor of tracheotomy. Again, after tracheotomy it is the exception to find an extension of the membrane in the fauces; but the local condition often begins to improve after operation. Watson Cheyne, of Edinburgh, attempts to show "that tracheotomy ought to be performed in cases of diphtheria as soon as it is certain that the larynx is affected, chiefly with a view of preventing the spread of the disease downward." There may be some reason in the rule; but there are many reasons why I do not favor its recognition. Nor do I believe in our ability to control the extension of the membrane by antiseptic solutions and forcible cleansing of the surface involved, as advocated by Mr. Cheyne. Certain it is, however, that it is rare to have the membrane extend down the trachea, unless it has already invaded it at the time of the tracheotomy. In this connection it may be well to consider another suggestion made by the same author, that is, "the utility of packing the epiglottic space above the tracheal opening with an antiseptic plug." The paper referred to seems to be absolutely theoretical in every part, and I am not disposed to believe that his conclusions are practical; but experience will, I think, confirm the thought that tracheotomy helps to prevent the extension of the membrane down the trachea, and possibly an antiseptic plug may be found useful. These remarks may lead some of you to accept the following deductions as practically correct. It would far transcend the limit of time allowed me to put before you all that might be said on the subject:

Mechanical obstruction in the larynx demands relief when sufficiently great to threaten death. Tracheotomy when performed under similar conditions with intubation promises better results, because:

1. It does not interfere so much with deglutition and nutrition.

2. The opening can be maintained as long as desired.

3. The opening is larger and is not so likely to become plugged with membrane.

4. If plugged the tube can be removed by the most ignorant attendant.

5. It enables us to introduce moist, warm, pure air to the lungs.

6. It gives us a much better chance to clear and cleanse the trachea.

7. The operation is not more dangerous from hæmorrhage from injury of important parts, from death by chloroform, narcosis, or from suffocation, than is intubation, from the laceration of contiguous parts, from the escape of the tube into the stomach, or from suffocative attacks excited by manipulation, and by the detachment of membrane.

Intubation is, however, not to be condemned. It has its sphere of usefulness and it may be said in its favor:

1. It is bloodless, and consent can be obtained when other operations would be denied.

2. It is more quickly performed and is done without an anæsthetic.

It will relieve ordinarily the symptoms of dyspnœa.

I believe, however, it will find its chief benefit when applied to chronic obstruction of a cicatricial character, and that its influence will be pernicious in these acute conditions because it does not fulfil so well all the necessities of the case, and will be resorted to by the unskillful and the timid surgeon, who is willing to accept an easy way out of a difficult position.

PERITONITIS.

The subject of peritonitis with laparotomy, prophylactic or curative is just now of vast importance. The magnitude of the subject and the mass of literature already accumulated preclude the possibility of fully considering the one, or of reviewing the other. Yet, I believe it will not be unprofitable to consider briefly what seem to be, in the absence of well established rules, justifiable procedures in the treatment of peritonitis.

Laparotomy is urged for gun shot wounds, stabs, contusions, ruptures and ulcerations, where it is supposed that visceral involvement has made possible the escape of fecal matter. The most difficult matter here to be considered is diagnosis. Are the diagnostic signs of such visceral effusion as may be expected to accompany shot wounds, stab or rupture promptly manifested and clear in their character? The shock of a penetrating wound varies not only with the amount of the injury inflicted, but with the individual and may delay distinct evidence of visceral, injury until a peritonitis fatal in the shock attending its onset closes the scene. Positive signs of perforation will in many cases be absent, and we must make our operation one of exploration, or else await the development of the case. In the absence of clinical signs, positively indicating visceral lesion, must we promptly resort to exploratory laparotomy in all cases of gun shot wounds?

I take the gun-shot wound as a typical one, apt to produce visceral lesion with effusion, and because there is greatest need for improvement in the therapeutic measures in this class of injuries. The answer to this question must be guarded, for a categorical one would but poorly express the sentiment of the profession of to-day. We may first exlude such cases as are accompanied by profound shock, evidenced by lowered temperature and loss of general vital power, since the minute examination of the abdominal viscera necessary to repair such injuries is likely to intensify the shock and hasten an unfavorable result. Again, it cannot be successfully denied that cases recover after visceral laceration by bullet wounds without operative interference. These recoveries are more apt to follow where the ball is small, and the intestinal canal is comparatively empty. The proportion of these spontaneous recoveries is as yet unknown; but they are, I believe, sufficient to justify non interference in penetrating wounds inflicted with a small ball, where urgent symptoms due to the escape of visceral contents, are not present. There remain, then, for exploratory laparotomy, cases in which shock is not too great or where it is transient, and followed by pain, anxiety, tympanitis and other symptoms indicative of visceral injury. Theoretically, the exploratory operation is correct and should be applied to every case of bullet wound since perforation is expected in all; but in practice there are many obstacles, and it is questionable how great an improvement in results obtained will follow the enforcement of this therapeutic measure. The average result attending the expectant treatment is bad, yet it must be remembered that the injury is severe.

Laparotomy as a therapeutic measure is one about which surgeons are anxious, and which they guard with every precaution against untoward results, although laparotomy performed on an unintflamed peritoneum is not considered a dangerous operation, and is usually innocent of harm. In estimating the absolute need for operative interference it should be remembered that all perforating visceral wounds do not permit the escape of visceral contents into the peritoneal cavity, and that small quantities may be absorbed or encapsulated, and the consequent inflammation be limited and a cure established. On the other hand, it is known that an acupuncture may excite peritonitis, that a bullet wound is prone to ulcerate at its exposed surface, that a break or rupture in the peritoneal surface which communicates with a connective tissue space or a visceral cavity is a focus for a diffuse peritonitis, while a smooth well approximated wound in which the peritoneal surfaces are in contact, readily heals.

If the severe shock of a great injury merges into a violent peritonitis, or the milder cases where diagnostic signs have been absent develop a diffuse inflammatory process, what are we to do? The peritonitis, diffuse and violent may develop without the escape of visceral contents, and the patient recover. Peritonitis following the escape of the visceral contents is almost certainly fatal. A laparotomy performed in the presence of peritonitis is certainly injurious and without any benefit unless we can remove septic fluids, drain purulent pockets, repair leaking rents in the viscera, or cut off from the peritoneal cavity infecting pockets by approximating serous surfaces. Diagnosis is here again deficient, and we are unable to determine the necessity for operative interference, the operation is again exploratory, except where the septic serous effusion is large or the peritonitis is circumscribed and purulent pockets are perceptible. Here the demand is unequivocal and clear and is not to be ignored. The well-founded general laws of surgery give warrant for this laparotomy and no exceptions are admitted where the vitality of the patient is not exhausted and death iminent. General loss of vital power threatening death, or grave functional disturbance, or the known presence of visceral contents in the cavity are urgent demands for operative interference, notwithstanding the presence of peritonitis. The laparotomy will be curative in its influence if visceral lesions are repaired, antiseptic cleansing thoroughly established, and good drainage effected. If the peritonitis is slow in its development and the diagnosis is uncertain, there is a wide diversity of opinion as to the method to be pursued. Operative interference is pernicious, and a toilet of the peritoneum is of no avail as a therapeutic measure unless septic fluid is removed or lacerations repaired.

Surgeons of wide experience do not interfere as long as there is a possibility of a spontaneous cure; others advise the operation as soon as peritonitis is evident.

The difficulty with most surgeons will be in the fact, that it is impossible to determine that conditions are present which demand interference and

which would be benefited by so grave an operation as abdominal section. I believe it to be safer to wait in the presence of peritonitis until definite indications are present to show fæcal extravasation, septic fluid, purulent collections, or a fatal tendency in the inflammatory process before resorting to a secondary operation. There is then no rigid rule to govern us in these cases. Each case is to be well considered and the result obtained, may neither uphold nor condemn the course pursued. Recovery follows desperate injuries and desperate remedies are legitimately applied to conditions of such grave prognosis.

It would be useless to quote the authorities, old and new, on this subject, since antiseptic surgery has revolutionized the entire subject of abdominal section. It is quite impossible in the time allowed now to analyze the subject or give reasons for the position here assumed. I believe, however, that immediate exploratory laparotomy offers the better field for operative work, and that it is justifiable where there is reason to think that visceral contents or considerable amount of blood has escaped into the peritoneal cavity.

Laparotomy is not demanded in the presence of peritonitis except where septic fluid is abundant, a purulent collection is evident, a general loss of vital power threatens death, or where there is grave functional disturbance.

These deductions are not so radical as many would like but they are less conservative than many practice, and I believe they fairly represent the position of the profession on a mooted point, which only the recorded experience of years can definitely determine. They are the principles which would at present guide me in the management of such cases, and are the deductions made from a limited experience and the study of some of the recent literature bearing upon the subject.

Traitement Chirurgical de la peritonite, par le Docteur H. Frue, Prof. agrégé à la Faculté de Médecine de Montpélier, etc. Paris, 1886.

Ueber Laparotomie bie Magen und Darmperforation, von J. Mikulicz.

Volkmann, Sammlung Klinischer Vorträge.

Discussion on shot-wounds of the intestines at the third annual meeting of the New York State Medical Association, in the *Boston Medical and Surgical Journal*, December 2, 1886.

MEDICAL PROGRESS.

THE INFLUENCE OF TEA, COFFEE, AND COCOA ON DIGESTION.—DR. JAMES W. FRASER, in the recent number of the *Journal of Anatomy and Physiology*, has recorded the results of an interesting series of experiments on the action of our common beverage on stomachic and intestinal digestion. The experiments have been most carefully arranged from a physical standpoint, and give us some valuable hints on the digestion of the chief alimentary principles, but they have no bearing, it should be mentioned, on individual variations of human digestion, or on the influence of various glands in preparing the gastric or intestinal juices. They are, however, of much value in showing how standard preparations of the peptic and pancreatic ferments are modified in action when our ordinary daily beverages are allowed their free action on the digestion of various articles of food. The digestive processes were carefully investigated, and absorption was imitated by a proper dialysing arrangement. An artificial peptic juice, and afterwards an artificial pancreatic juice, were employed, and the amount of nitrogenous matter dialysed was most carefully estimated. The food stuffs experimented on were raw and cooked serum and albumens, raw and cooked myosin, syntonin, alkali albumen, casein, gluten, starch, and oleine. The results obtained from an exhaustive series of experiments and analyses show that all the three typical infused beverages — tea, coffee and cocoa—retard the digestion and absorption of all the nitrogenized proximate principles of dietetic substances when peptic and pancreatic digestion are taken together, and that they uniformly retard peptic digestion, although tea may assist the diffusion of peptones from the stomach. Pancreatic digestion is also uniformly retarded, and diffusion thereafter is but rarely assisted, so that neither of them compare advantageously with water as a standard beverage for experimental investigarions. A summary of dietetic advice is added to Dr. Fraser's observations, which will, in the main, agree with that which is now given by our best authorities in cases of dyspepsia; and we are glad that experimental injuries afford so strong a basis of support to empirical observations:

"1. That it is better not to eat most albuminoid food stuffs at the same time as infused beverages are taken, for it has been shown that their digestion will in most cases be retarded, though there are possibly exceptions. Absorption may be rendered more rapid, but there is a loss of nutritive substance. On the other hand, the digestion of starchy food appears to be assisted by tea and coffee; and gluten, the albuminoid of flour, has been seen to be the principle least retarded in digestion by tea, and it only comes third with cocoa, while coffee has apparently a much greater retarding action on it. From this it appears that bread is the natural accompaniment of tea and cocoa when used as the beverages at a meal. Perhaps the action of coffee is the reason why, in this country, it is usually drunk alone or at breakfast, a meal which consists much of meat, and of meats (eggs and salt meats) which are not much retarded in digestion by coffee. 2. That eggs are the best form of animal food to be taken along with infused beverages, and that apparently they ase best lightly boiled if tea, hard boiled if coffee or cocoa, is the beverage. 3. That the casein of the milk and cream taken with the beverages is probably absorbed in a large degree from the stomach. That the butter used with bread undergoes digestion more slowly in presence of tea, but more quickly in the presence of coffee or cocoa; that is, if the fats of butter are influenced in a similar way to oleine. 5. That the use of coffee or cocoa as excipients for cod-liver oil, etc., appears not only to depend on their pronounced tastes, but also on their action in assisting the digestion of fats."—*Lancet*, May 7, 1887.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Thirty eighth Annual Meeting, held in Central Music Hall, Chicago, June 7–10, 1887.

TUESDAY, JUNE 7—FIRST DAY.

The Association was called to order at 11 A.M. by CHARLES GILMAN SMITH, M.D., Chairman of the Committee of Arrangements.

Prayer was offered by Rev. S. P. McPherson.

The President, Dr. E. H. Gregory, of St. Louis, Mo., Vice-Presidents, Drs. P. H. Millard, of Minnesota, Wm. H. Pancoast, of Pennsylvania, and W. C. Wile, of Connecticut, the Permanent Secretary, Dr. Wm. B. Atkinson, and the Treasurer, Dr. R. J. Dunglison, were present.

HON. JOHN A. ROCHE, Mayor of Chicago, was introduced by the Chairman of the Committee of Arrangements, Dr. Chas. Gilman Smith, and delivered an

ADDRESS OF WELCOME.

Mr. President and Gentlemen, Representatives of the Science of Health and Life:—In the name of the citizens of Chicago, I welcome you to this city, distinguished for the large number of able and eminent members of the medical profession, and for the exemplification, in all the avocations and pursuits of life, of the precept: "Whatsoever thy hand findeth to do, do it with thy might." Your mission—to preserve health and remove disease, to prolong life and make it a blessing—is a beneficent and noble one, worthy of all honor. And though you have not yet succeeded in overcoming death, you have robbed it of half its terrors.

The present generation has seen great progress in medical science, and the medical profession, I think, has kept pace with the other learned professions, if it has not even excelled them, in original investigations and practical discoveries for the benefit of mankind.

When in health, we laugh at the doctors, and sometimes enjoy a joke at their expense. But in sickness, you are our hope and refuge, and to the worn and wasted patient, just struggling back to life from the gates of death, you are like "the shadow of a great rock in a weary land."

The interchange of ideas and experience, and the discussion of theories and experiments by large bodies of educated men, gathered from different and distant sections of the country, by which the individual thought and knowledge of each becomes the property of all, is a comparatively modern outgrowth of society, and must contribute greatly to the interest and usefulness of the medical profession, being full of promise for the future. These gatherings for mutual comparison and consultation minimize differences, soften asperities cultivate the amenities, strengthen the humanities, stimulate inquiry and investigation, extend the horizon of mental and moral vision, enlarge the boundaries of human knowledge, and tend to the unification, improvement and well-being of the whole community.

Gentlemen: I came here as the official representative of a great and hospitable city whose latchstring is always out, to emphasize the welcome of Chicago to this large, intelligent and representative convocation of a profession whose chief occupation is to *save* life and not *destroy* it, and whose cardinal doctrine is, that a sound mind in a sound body is essential to the best performance of the duties of *this* life, and a great help in fitting men for the life *hereafter*.

Invitations were presented and accepted from various institutions and clubs of Chicago.

Ex-Presidents Drs. N. S. Davis, Wm. Brodie, J. M. Toner, and T. G. Richardson, by invitation, were seated on the platform.

A number of voluntary papers were announced and referred to the appropriate Sections.

Vice-President Perry H. Millard, of Minnesota, occupied the Chair while the President delivered the

ANNUAL ADDRESS.

(See THE JOURNAL, June 11.)

On motion, a vote of thanks was tendered the President for his able and interesting address, and it was referred for publication.

DR. A. NELSON BELL, of New York, offered the following

REPORT OF THE COMMITTEE ON MEMORIALIZING CONGRESS RELATIVE TO MEDICAL AND SANITARY SERVICE ON BOARD IMMIGRANT PASSENGER VESSELS.

Your Committee regrets that, notwithstanding the delay of its report (which would have been submitted last year but for the unaccountable failure of the mail delivery to the meeting at St Louis), the purpose for which it was appointed is still unattained. After conference and considerable correspondence with the House Committee on Commerce, your Committee was given to understand that the "Act to Regulate the Carriage of Passengers by Sea," of July 22, 1882, already provided against the evils of which it complained. To that reply the Chairman of your Committee addressed a letter, January 21, 1886, to the Hon. John H. Reagan, Chairman of the House Committee on Commerce (and author of the "Act to Regulate the Carriage of Passengers by Sea" as it now obtains), calling his attention to the manner in which the obligations of the law are evaded, and requesting that it be amended accordingly; comprehending such suggestions for amendment as had been agreed upon by your Committee.

The chief evasions of, and abuses under the law are, firstly, wherever the law reads "whereon emigrant passengers, or passengers other than cabin passengers," *first* cabin and *saloon* passengers are construed into exemption from the legal obligation; and secondly, in the incompetency, insufficiency and disgraceful status of the medical officers.

To meet these evasions and wanting conditions, your Committee recommended and still urges that the law be amended as follows:

1. Wherever the words "cabin passengers" occur, they should be made to read *first* cabin and *saloon* passengers.

2. That section 5, of the Act of July 22, 1882, which requires that "Every steamship or other vessel carrying or bringing emigrant passengers or passengers other than cabin passengers exceeding fifty in number, shall carry a duly qualified and competent surgeon or medical practitioner," besides the amendment of the words cabin passengers, be further amended, after the first occurrence of the word "practitioner," to read as follows:

And where the number of such passengers and crew is over six hundred, a junior or assistant surgeon or medical practitioner in addition shall be appointed. And the services of such surgeons or medical practitioners shall be promptly given without fee in every case of sickness, disease or accident originating on board and incident to the voyage, to any of the passengers or crew, or to any infant or young child of any such passenger who may require their services; and the medical officer, where there is but one, and the senior where there are two, shall also be required to perform the duties of sanitary officers; to make daily inspections of all inhabitable portions of the vesssl, and daily reports in writing thereon to the master of the steamship or passenger vessel, together with such suggestions and recommendations as in his judgment may be necessary to the preservation of health on board. He shall also exercise constant vigilance in regard to the condition of the provisions and water, and promptly report to the master anything which may appear to him to be deleterious to the health of any person on board. And for the prompt exercise of these functions and the maintenance of the respect to which such medical and sanitary officers are entitled, they shall be provided with a steward or apothecary competent to dispense medicine under their direction and for their special service; and their tenure of office, remuneration and right to quarters, subsistence, and attendance shall be upon the same basis as, and coördinate with the purser of the vessel on which they serve.

For a violation of these provisions, or either of them, or the disregard of the recommendations made in writing by the military and sanitary officers as herein provided, the company to which the steamship or other passenger vessel belongs shall be liable to a penalty not exceeding two hundred and fifty dollars in every case. Moreover, it shall be the duty of the sanitary and medical officers of every steamship or other vessel carrying or bringing passengers to the United States, to report in writing under oath, to the health officer of the port at the port of arrival, in detail, every case of illness or accident, with the nature and the result thereof, and every case of imbecility or insanity which may have fallen under his observation, and upon all the conditions herein provided for the protection and presevation of the health of all persons on board, and for the protection of the United States against the immigration of persons excluded by Section 2 of the "Act to Regulate Immigration" of August 3, 1882.

Your Committee feels constrained to urge that, notwithstanding the apparent conclusion of the House Committee on Commerce that the laws governing immigration are already sufficient, the exceptions to which your attention is invited are of such importance as to call for additional Congressional action, not only for the evils incident to an increasing immigration, overcrowding and excessive mortality from ordinary diseases on board ship, but also on account of the increased danger of introducing epidemic disease by reason of the incompetent medical service and the want of proper sanitary care.

The average duration of the time of emigrants on board ship to the time of their discharge at Castle Garden, New York, is about ten days. Common observation and some familiarity with the salutary effects of a sea voyage on such persons, justify the opinion that there should be an improvement in their health and a decrease in their ordinary rate of mortality; yet, by the most recent summary at the disposal of your Committee, of 27,157 emigrants who took passage to New York during the month of April last, 41 died on the voyage—an annual rate of over 55 per 1,000; more than twice as large as the average death rate of the populations at the ports of departure, and larger than that of any similar number of persons, in the absence of an epidemic, of which your Committee has any knowledge. The death rate of Cairo, in 1885, was 48.5; of Alexandria, 51.4. But the mortality of both those places is exceeded by the deadly artificial climate of this class of passenger vessels, and the criminal negligence of those who transport emigrants to the United States!

Your Committee has not felt itself called upon to enlarge its investigation into the extent of the failure of that portion of the law which is intended to prohibit the immigration of convicts, lunatics, idiots and other persons liable to become a public charge. It will suffice to state that all persons familiar with the statistics of institutions for the care of such persons in the United States, are abundantly conversant with the magnitude of the evil. But it has been our effort to meet it by securing such amendments to the laws as we have recommended.

With the hope that the effort of the Association may be more successful, if it be your pleasure to accept this report as final and to adopt it as its sense of the issue, your Committee offers the following resolution:

Resolved, That the Secretary of the Association be and is hereby directed to transmit copies of this report to the Hon. Secretary of the Treasury of the United States and to both the Senate and House Committees on Commerce, and in behalf of the American Medical Association we urge upon them such action, through Congress or otherwise, as will secure better protection to the health and lives of emigrants, and the United States against the immigration of dependent persons.

A. N. BELL, M.D., Chairman,
I. N. QUIMBY, M.D.,
H. H. SMITH, M.D.,
A. L. GUION, M.D., *Committee.*

On motion of Dr. D. J. Roberts, of Tennessee, it was accepted and the appended resolution adopted.

Dr. Wm. Brodie, of Michigan, moved to take up the amendment offered last year creating a Section on Dermatology and Venereal Diseases.

Dr. G. H. Rohé, of Maryland, moved to amend the title to be the Section on Dermatology and Syphilography. This was accepted by the original mover and unanimously adopted.

Dr. J. McF. Gaston, of Georgia, as Chairman of the Committee to Memorialize Congress on Yellow Fever Inoculation, asked leave to report.

On motion of Dr. J. M. Toner the matter was referred to the Section on Practice of Medicine.

After the various delegations had been requested to meet immediately upon adjournment for the purpose of selecting their members of the Nominating Committee, the Association on motion adjourned, to meet on Wednesday at 10 A.M.

WEDNESDAY, JUNE 8—SECOND DAY.

THE PRESIDENT called the Association to order at 10 A.M., and prayer was offered by Rev. F. W. Gunsaulus.

On motion of Dr. J. V. Shoemaker, of Philadelphia, the regular order of business was suspended until the business of this session should be disposed of.

The Chairman of the Committee of Arrangements presented several invitations, which were accepted.

By permission, Dr. N. S. Davis gave notice that the extensive

LIBRARY OF THE LATE DR. J. S. JEWELL

was for sale in the book-store of A. C. McClurg & Co., cor. Madison St. and Wabash Ave., Chicago.

DR. J. M. TONER, President of the Board of Trustees of THE JOURNAL, read the

REPORT OF THE TRUSTEES OF THE JOURNAL

including in it the report of the Editor, as follows:

The Board of Trustees for publishing THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION respectfully submit their annual report for the year ending March 31, 1887. At the earnest request of the Trustees, Dr. N. S. Davis consented to continue the active management of THE JOURNAL in both its editorial and publishing details. The uniform regularity of its issue has been unbroken. The practical operation of THE JOURNAL'S own printing office has been more gratifying during the past year, as will appear from the editor's report. Gradually we may expect this office to enlarge its already valuable service to the Association. It is hoped that all members of the Association who are able will visit it at 68 Wabash avenue.

The report of Dr. Davis to the Board of Trustees is so full in all details that we submit it with our report, as follows:

Annual Report of the Editor of the Journal of the American Medical Association for the Financial Year Ending March 31, 1887; Made to the Board of Trustees April 15, 1887.

To J. M. TONER, M.D., PRESIDENT OF THE BOARD:

In accordance with your rules I respectfully submit the following report concerning the progress and financial condition of THE JOURNAL of the Association during the year ending March 31, 1887, at this early period, that the members of your Board may have more time to consider its contents, and be better prepared to submit their own report at the next meeting of the Association.

Weekly Circulation.—At the date of this report, March 31, 1887, the total regular weekly circulation of THE JOURNAL was 4,387, of which 3,478 are sent to members of the Association whose names are furnished by the Treasurer, and 909 are furnished to regular subscribers and exchanges. This shows a net increase in the *membership* of 104 and in the total weekly circulation of 116, since my annual report for March 31, 1886. The number of copies of THE JOURNAL printed each week during the past year has been 4,800, an increase of 300 over the number printed each week for the preceding year. Although the excess printed has been 413 more than required for the regular weekly mail list, yet the number required to supply extra copies to contributors, to complete files for members, and sample copies when called for, is such that we have not more than about 200 complete files on hand for future use.

Receipts.—The receipts at the office of publication relate only to money received from subscribers, advertisements, reprints and extra JOURNALS; all membership dues being paid to the Treasurer of the Association and accounted for by him in his annual report. From the sources just named there has been received at this office during the year ending March 31, 1887, the sum of $7,580.63; of which $2.494.09 was from subscribers, $751.35 for reprints, and $4,335.19 for advertisements; making an increase from these sources of $2,250.17 over the receipts from the same sources the preceding year.

Expenses.—The total cost of publishing THE JOURNAL, 4,800 copies each week, and such reprints as have been ordered by contributors, for the year ending March 31, 1887, is $13,162.01, of which $751.35 was for reprints, making the cost of the publication of THE JOURNAL alone $12.410.66; an increase of $1,426.99 over the cost of publication of the preceding year. This additional cost is fully accounted for by the 300 more copies of THE JOURNAL and from eight to ten more pages of advertisements each week, than was published the preceding year; and is considerably more than balanced by the increased receipts at the office of publication as shown in the preceding paragraph. The total amount drawn from the Treasury for editorial expenses, including foreign and domestic correspondence, reports of proceedings of medical societies, clinical lectures, etc., and the salary of an Assistant Editor in the office, during the year ending March 31, 1887, is $2,758.95; making the total cost of THE JOURNAL of the Association for the year ending March 31, 1887, $15,920.96. And the total receipts from all sources, as will be shown by the annual report of the Treasurer, $21,723.22.

Property on Hand.—The cash value of the type, fixtures, etc., belonging to the Association printing office as established last year, after deducting 15 per cent. for wear, is $921.34, to which has been added new type, etc., as needed during the present year, costing $137.22, making total cash value of the printing office at date of this report $1,058.56; on

which we have a policy of insurance for $800. (The sum of $137.22 paid for new type is included in the aggregate publication expenses given in a preceding paragraph.) Some of the numbers belonging to each of the first four volumes of THE JOURNAL are exhausted, and consequently we can no longer furnish those volumes complete. Of volumes five and six we have about fifty copies on hand, and of volumes seven and eight (not yet finished) we have nearly 200 copies. When republishing the constitution, by-laws and Code of Ethics in the last number of volume vii, we had printed in neat *reprint* form an edition of 8,000 copies of the Code of Ethics, at a cost of less than two cents per copy. About 4,000 have already been sold at such prices as fairly covers the cost, leaving 4,000 on hand as the property of the Association. We have been furnishing single copies to applicants at three cents, which covers the original cost and postage; deeming it desirable to encourage as wide a distribution of the Code as possible without actual loss to the Treasury.

Explanations.—The figures given in the paragraph of this report relating to the weekly circulation of THE JOURNAL make it appear that the increase in the membership of the Association during the year had been only 104, and in the total circulation only 116. The details upon our books show that the actual addition of new members during the year was 506, and of new subscribers 18; making a total of 524 additions. On the other hand, early in the year the Treasurer ordered the names of 202 members to be stricken from our mail list for *non payment* of annual dues, and 42 from deaths, making a loss of 244 members. In my last annual report it was stated that about $2,300 was due from subscribers, some of whom had received THE JOURNAL from the beginning of its publication without payment. And during the first half of the present year it was found necessary to erase the names of 249 of these subscribers for continued non-payment; making the loss in members and subscribers 493, or only 31 less than the total of additions. Nearly all the losses were incurred during the first half of the year, and before the close, a few of those who had been discontinued paid up and were reinstated, making the net gain as stated in the paragraph under the head of "weekly circulation."

It must not be forgotten that when the publication of THE JOURNAL was commenced in 1883, the New York State Medical Society had recently repudiated the National Code of Ethics, thereby forfeiting her right to representation in the American Medical Association, and the seditious doctrine of a "*New Code*" or "*No Code*" was being actively disseminated in other States, and the Association was being misrepresented and denounced by some of the most influential medical journals in the country. The result of this Code controversy was the final withdrawal from membership of a large number of those who espoused the New York Code during the years 1883–4. Hardly had this Code revolt spent its force, when the still more bitter opposition was encountered by the Association, in attempting to effect a preliminary organization for the Ninth International Medical Congress—an opposition which did not yield until after the annual meeting of the Association in May last, and many of those engaged in it had withdrawn either by direct request or by refusal to pay their dues. The full force of this last revolt was fairly spent during the first half of the present JOURNAL year, and during the last six months there have been more applications for membership and renewals of subscriptions than at any previous time since THE JOURNAL was established. The fact that in less than four years of such unprecedented professional controversy THE JOURNAL should have been sustained while steadily, firmly, though temperately defending the Association, its National Code of Ethics, and persistently advocating the only practicable representative organization of the whole profession by local, State and National associations, and more than double its circulation and at the same time increase the income of the Association more than threefold, certainly demonstrates the wisdom of its establishment, if it does not prove the ability, efficiency and prudence of those having the responsibility of its management.

Suggestions.—The experience and results of the past year's work cause me to recommend a continuance and more permanent establishment of THE JOURNAL printing office. Both the financial resources and the number and quality of the contributions make it desirable to add four more pages of reading-matter to THE JOURNAL at the commencement of the next volume. But in doing so, the same caution must be exercised to avoid making any such increased expenditures as will place the Treasury in debt.

Dr. Wm. G. Eggleston has continued to fill the position of Assistant in the editorial work during the year, with promptness and ability—and to the rare faithfulness and business capacity of Mr. J. Harrison White do we owe much, in his capacity of both foreman of the printing office and Advertising Agent of THE JOURNAL.

Respectfully submitted.

Yours truly, N. S. DAVIS, M.D.

Editor of The Journal of the American Medical Association.

In reviewing this report we note (1) The regular issue of THE JOURNAL has been increased by three hundred copies per week. This is exactly the same increase as occurred during the previous years. This increase was in spite of the fact that several hundreds of delinquent subscribers were cut off. (2) The income of THE JOURNAL, from its subscribers, its advertisements and its reprints, was $7,580.63, or $2,250.17 more than during the previous year, from the same sources; this is exclusive of all membership dues to the Association, which are paid directly to the Treasurer at Philadelphia. (3) THE JOURNAL'S expenses for publication are increased by $1,426.69. The reasons for this are fully explained in the editor's report. But it also appears that the increased receipts are largely in excess of the increased expenditures. The total amount paid for all editorial work to March 31, 1887, was $2,758.95, making the total expense of THE JOURNAL to that date $15,920.96, or $1,822.19 more than the previous year. (4) Your Trustees were authorized to expend $6,000 for

editorial work. But they have been unanimous in the determination to incur no debt, hence they have expended only such sums as the income of the Association has warranted. This they have been compelled to limit to $2,758 95. (5) In common with others, we look forward to constant increment in the resources of the Association, and an equal increase in the labor that can be employed to advance THE JOURNAL toward the highest attainable standard. (6) The marked success that has attended the publication by the Association of its journal in its own office fully warrants the Trustees in its continuance and gradual enlargement. (7) The increased receipts of the Association also warrant substantial additions to the working editorial force and the increase of the number of pages of THE JOURNAL. (8) The Trustees are happy in being able to announce that at their solicitation Dr. Davis has consented to continue the management of the affairs of THE JOURNAL.

On motion of Dr. Wm. Brodie the report was accepted and adopted.

DR. N. S. DAVIS then read the

REPORT OF THE SPECIAL COMMITTEE ON CHANGES IN THE PLAN OF ORGANIZATION AND BY-LAWS OF THE ASSOCIATION,

appointed in accordance with the following resolution adopted by the Association at the last Annual Meeting:

Resolved, That a committee of nine members, including the President, President-elect, and the four Vice-Presidents elect, be appointed by the Chair to consider the various propositions looking to the amendment of the organic law of the Association by the *establishment of Branches*, or in any other way; said committee to report at the next annual meeting what measures of organization, if any, may be desirable.

Familiarity with the history of this Association shows that the adoption of this resolution was inspired by two leading considerations: First, the desirability of a more permanent and representative business committee to perform the duties now devolving upon the Committee on Nominations, and to consider all other questions of importance that may be referred to it by a vote of the Association, and report upon the same at such time as the vote of reference shall direct. Second, the desirability of increasing the paying permanent membership, that the annual revenue may be increased. Perhaps no other part of the practical working of the Association has occasioned so much adverse criticism as the hasty and imperfect method of selecting, after the commencement of each annual meeting, of the Committee on Nominations by such little groups of delegates from each State and Territory, as could be gathered in some corner of the room in the brief recess of fifteen minutes, and on whom devolved the paramount duty of nominating all the general officers of the Association, of seven members of the Judicial Council, three members of the Board of Trustees, and the selection of the next place of annual meeting; duties that the members are generally required to commence discharging immediately after their names are announced from the platform as having been selected for that purpose.

A committee thus hastily appointed, compelled to discharge duties of the greatest importance with equal haste, and then cease to exist, could not fail to commit some errors and to make some injudicious recommendations. Besides the absence of any permanent committee during the interim between the annual meetings to which proposed changes or amendments of the by laws or other important topics, requiring time and deliberation, could be referred, has occasioned no less embarrassment than the hasty work of the Committee on Nominations. For instance, amendments to the organic laws proposed at one meeting cannot be acted upon until the next annual meeting. Literally they lie on the table, receiving the special consideration of no one, and when the time comes to act upon them, they have neither been moulded into proper form to fit the place they were designed to occupy, and perhaps their authors even are not present, to explain their practical bearing either for good or evil.

The desirability of having more time and deliberation given to the purely business matters of the Association by a properly organized Council or standing committee on business, has long been recognized by all the more experienced members of the Association; and various plans have been suggested from time to time without leading to any definite action. For several months prior to the last annual meeting of the Association, those who were more particularly influenced by the desire to obtain a large revenue, suggested and actively discussed the practicability of so changing the plan of organization as to admit the formation of Branches whose members should be also permanent members of the Association, amenable to the payment of membership dues, and thereby entitled to THE JOURNAL. These suggestions had for their object the assimilation of our organization to that of the British Medical Association, by which it was claimed that a much larger proportion of the profession could be included in the membership nominally, while the whole business management could be confided to a *Council* of limited number. A large part of the criticisms hitherto made, have obviously emanated from parties who have but a limited knowledge of the history of voluntary medical organizations and of the practical working of the principles necessarily involved. Still less have they studied the influence of density or sparcity of populations, national habits, modes of thought, civil institutions and municipal divisions, on the success or failure of voluntary professional organizations in any given country. Yet all of these have their influence, and need to be carefully studied by all who would successfully shape the permanent social automony of any profession or class of people. For instance, the members of the medical profession of Great Britain, numbering little more than 25,000, constituting a part of an enlightened people occupying the British Islands, a territory scarcely equal to the six New England States or to the single State of Texas, and accustomed to no well-defined political divisions with each its own legislative and judicial functions, like our several States; but thoroughly accustomed to look to one central imperial government, naturally, and probably judiciously, adopted

a national organization founded on the idea of making it possible for all the legally qualified members of the profession to become members. For this purpose, such rules were adopted that the members of the profession in any part of the country could associate together to constitute a *Branch Association* or not less than a specified number, and by conforming to the general rules prescribed and paying the annual membership fee, they became members of the National organization, entitled to attend the annual meetings and receive the *British Medical Journal*. A *Council* of a limited number was formed to which was committed the entire business management of the affairs of the National Association, and to this Council each *Branch Association* was authorized to elect one member or more according to the number of its regular members. The British Medical Association, organized on the plan here briefly outlined, commenced its history fifty-five years since, or fourteen years before the organization of this body. Its progress has been such that at present its total membership, including the membership of all its Branches, numbers about 12,000, or a little less than half of the legally registered members of the profession in that country; while its governing Council numbers seventy-one members. Looking from this distance, upon its steady growth, the amount of scientific and practical work accomplished, the high reputation of many of its members, and the value of its journal, we rejoice on account of its success, and very naturally feel inclined to copy its methods. Before doing so, however, it will be wise to inquire whether the extent of our country, the sparseness or density of its population, the freedom and habits of thought of our people, and the political influences exerted by separate State governments and their diverse legislation are such as to permit the same methods to be applied with equal success here? If it has taken more than half a century for the British Medical Association to so extend its Branches over its comparatively limited but densely populated territory as to include less than half the registered practitioners of that country, how many centuries would it take an Association, on the same basis, to so extend its Branches as to include an equal ratio of the profession scattered over the vast territory from Maine to California, and from Lake Superior to the capes of Florida? And if the members of the *Council* of the British Medical Association from the Branches more distant from the central places of meeting four times a year, find attendance so burdensome that several do not attend even once during the year, and some of the Branches become so indifferent as to neglect the election of delegates to the Council to which they are entitled, as shown by reports at the last annual meeting in Brighton, how would it be if the attempt should be made to require a select *Council* of this Association to meet four times a year, composed of delegates from Branches in California, Maine, Minnesota, Texas and Florida, at some central place, as Washington, Philadelphia, or Chicago, for the satisfactory consideration of all its important interests? If the practical result of the experiment by the British Association, where all the circumstances have been most favorable, has been to put the entire control of the affairs of the Association in the hands of those members of the Council in London and in the few important cities affording most ready access thereto, and thereby to create much jealousy and dissatisfaction in some quarters and great indifference in other places, it requires but a moment of serious reflection upon the extent of our country, its division into nearly forty States, each legislating independently on all matters of education and professional regulation, with all classes of the people, not excepting the members of the medical profession, thoroughly imbued with the idea of equal rights and equal privileges, to be exercised either in person or by a chosen representative, to see that the evils actually developed in the progress of the British Association would be produced with far greater rapidity and intensity, if the same machinery and methods were adopted here. Indeed, if the exact plan of organization and methods of the British Medical Association were substituted for the present plan of organization of this Association, it requires no prophetic vision to see clearly that in less than two decades of years the members of the *Council* furnished by the *Branches* of five or six States in which are embraced as many chief cities, would have entire control of the affairs of the Association, and the Branches in the more distant States and the great mass of general practitioners in all would no longer have either voice or interest in the organization, and the already visible antagonisms and prejudices between the specialist and the general practitioners would have been intensified a hundred fold, to the great detriment of both. The three objects of paramount importance to be accomplished by medical organization are: *a*, the promotion of direct personal and social intercourse between physicians, by which mutual respect, personal friendship and unity of sentiment are greatly promoted; *b*, the more rapid increase and diffusion of medical knowledge, scientific and practical; and *c*, the developing, unifying, concentrating and giving efficient practical expression of the sentiments, wishes and policy of the profession concerning its educational, legal and sanitary welfare and the relations of the latter to the community as a whole.

As the gathering of all the members of the profession, numbering many thousands, from so widely extended a country as ours, into a single society for personal intercourse, is impracticable, the first of these leading objects can only be attained by organizing primarily into city, town, county, and limited district societies, in which the necessary personal intercourse can be enjoyed without material expense, or being placed beyond the reach of their patients. The same object is further promoted by sending a delegation from each of these circumscribed or local societies, once or twice a year, to constitute the State Society; and still further by these State Societies sending delegates to one more protracted meeting each year, which would constitute the National organization. Thus by the constant changing of the personality of the delegations, the profession of the

whole country is made to feel the genial influence of personal intercourse and mutual respect.

By the more frequent meetings of the primary local bodies and the more free or informal discussion of all professional topics, a general interest for more knowledge is fostered, and the spirit thus developed is carried by their delegates to the State Societies, where its practical fruits appear in the form of reports on recent improvements or on the special developments of disease, and in papers the consideration of which intensifies still further the spirit of inquiry, of scientific investigation, and a wider range of discussion; and these results are carried with the delegates from the State Societies to the National organization, where the mingling of the more intelligent and ambitious from all parts of our wide domain in social union and in the scientific and practical discussion of important topics belonging to every department of medical science and art, adds still further to the development and diffusion of medical knowledge, both scientific and practical. We say diffusion as well as development, because every item added to the stock of knowledge, and all the increase of mental activity, discipline, and breadth of view, gained by the successive exercises from the smallest town society to the National Association, are carried back by the delegates to the State Societies, and by them to the local societies in every populous city and county in all the States of this Republic. And not only so, but a still more rapid and wider diffusion of whatever is evolved of value is given in the pages of the medical periodical literature: and thereby the second object we enumerated is most efficiently accomplished.

For the accomplishment of the third important object to be attained by medical organization, unity and concert of action, certainly no scheme has been yet devised equal in fairness and efficiency to that which gathers the active working members of the whole profession into primary local societies, from which delegates chosen on a uniform ratio of representation are made to constitute the State Society; and from these again delegates on a similar ratio of representation are sent to constitute the responsible voting part of the National Association, thus constituting a ready professional mechanism through which the views and wishes of the profession can be gathered and efficiently expressed on all questions relating to education, medical legislation, and the sanitary interests of the people. And the same can be brought to bear with equal force upon the action of legislative bodies, either municipal, State or National.

The organization of the whole profession we have so briefly outlined, with the great leading objects it is designed to accomplish, is but the ideal representation of the actual organization of the profession in this country at the present time. The organization of this Association commenced in 1846, and completed in 1847, is, and has been from the beginning, a representative body with the State and local medical societies in all the States for its essential constituency, or "Branches," (if there is any particular merit in that name). It is true the fundamental representative principle was at first imperfectly or unequally applied, in consequence of the comparatively small number of either State or local societies then existing. But the clear recognition of the local and State societies as the National basis, and the fixing of a uniform ratio of representation for them, led to so rapid an increase in the number of regular medical societies, that in less than twenty years every State had its society sending delegates to the National Association, and almost every city and populous county or district, its society, furnishing delegates to the State and National organizations, and including an aggregate number of members of the profession greater than now constitute the British Association with its Branches.

The outline of a systematic and harmonious professional organization having thus rapidly extended over the whole country, during the last twenty years its basis in the local medical societies has been steadily increasing and becoming more efficient for good; the State Societies in the same ratio increasing in membership and more methodical and efficient in their work; while this National Association has increased with every increase in the constituent societies, steadily rendered its work more systematic and efficient, by providing for the scientific and practical work of every legitimate department or special branch in its Sections, as well as the general business interests of the whole, and at the same time removing the errors and inequalities at first made in the application of the principle of representation, until practically the regular local and State societies are as truly "Branches" of this Association as are the *Branch* Societies in Great Britain Branches of the British Medical Association, with the very important advantage of having the right to send to this body one delegate for every ten of their members, instead of one delegate from each Branch to a limited council, while by the amendment to the constitution adopted in 1884, every member of the regular local and State societies entitled to representation, may at any time become a *permanent member* of this body by furnishing a certificate of good standing in his local society and paying the annual membership fee. Thus perfected by the experience of the past forty years, a system of professional organization has been developed in strict accordance with the spirit of all our institutions and the habits of thought of all classes of our people, capable of indefinite extension, and each part harmoniously fostering every other. By making membership in a local society a necessary qualification for membership in the State and National Societies, the strongest possible inducement is presented for organizing and maintaining these primary and essential bodies by all intelligent members of the profession. By providing for delegates from the local and State societies on a uniform ratio of representation, and placing the whole business management of the Association in the hands of such delegates by restricting to them the right of voting, the most reliable check is put upon the tendency to centralization or local control, or any form of class supremacy, while the door to permanent membership is open to all who are willing to support the interests of the pro-

fession in their own districts. After a most careful study of the history and practical development of medical organizations, both at home and abroad, your Committee cannot recommend any radical changes in the existing plan of organization for this Association. On the contrary, we urge the preservation of all the essential principles involved, and their present accurate adjustment for the accomplishment of all the legitimate objects of voluntary medical organization in a country of free institutions and representative governments, while careful attention should be given to the correction of minor defects in practical application, and such changes in by-laws as will facilitate both the business and scientific interests of the whole body.

However, the changes made in the publication of the proceedings and papers, the increase in the number of Sections, and the necessity for a more permanent committee on business, have made some sections of the Constitution and By-laws inapplicable or incapable of proper execution, and therefore need readjustment, with perhaps some additions.

In the second section of the Constitution, or Plan of Organization, title, *Members*, is the following paragraph, adopted as an amendment in 1884: "*Members by Application* shall consist of such members of State or County Societies, certified to be in good standing by the President and Secretary of said Societies, as shall make application for admission. They shall simply have the right to receive THE JOURNAL on the same terms as other members." This is defective: *a*, in limiting the privilege of making application to members of State and County Societies only; *b*, in not specifying whether such State and County Societies are entitled to representation in this body or not; and *c*, in giving no adequate motive in the last paragraph for seeking that kind of membership. Any member of the profession, without regard to membership in any society, by paying the subscription price, $5 per annum, which is the same as the Annual membership fee, can receive THE JOURNAL. To afford a valuable and adequate advantage to members by *application*, and at the same time guard against their admission from such State or County Societies as are themselves not entitled to representation by delegates in the Association, we respectfully propose the following as a substitute for the paragraph previously quoted:

Members by *Application* shall consist of such members of the State, County and District Medical Societies entitled to representation in this Association, as shall make application in writing to the Treasurer, and accompany said application with a certificate of good standing signed by the President and Secretary of the society of which they are members, and the amount of the annual membership fee, $5. They shall have their names upon the roll and have all the rights and privileges accorded to *Permanent Members*, and shall retain their membership on the same terms.

This enables any one or even all of the members of recognized State and local Societies, under adequate safeguards, to become *de facto Permanent Members* of the American Medical Association without the expense of attending an annual meeting.

From the *fifth section* of the *Constitution*, relating to "*Standing Committees*," the *first* and *third paragraphs* should be stricken out, leaving intact only the second paragraph, relating to the "Committee of Arrangements." In place of the first paragraph to be erased, your Committee recommend the insertion of the following important provision, viz.:

The General Committee or Council shall be composed of *two members* from each State and Territorial Medical Society entitled to representation by delegates in the Association, and from the Medical Departments of the U. S. Army, Navy, and Marine Hospital Service. They shall be chosen by the members registered and present at each annual meeting, from each State, Territory, and from the Medical Corps of the U. S. Army, Navy, and Marine Hospital Service, acting separately, on the third day of each annual meeting; each delegation reporting the names of the members chosen to the Permanent Secretary of the Association on the same day, that they may be announced by him at the opening of the morning session of the fourth day. At the first election each delegation shall choose *two* members of the General Committee, one of whom shall serve *one* year and the other *two* years, and at each annual election thereafter one member shall be chosen to serve for two years, thus making the term of office of members of the General Committee *two* years. It shall be the duty of the General Committee, thus constituted, to organize by choosing annually a Chairman and Secretary, and such sub committees as may be found necessary to facilitate the work that may be assigned to it; to meet annually at the place and on the day preceding each annual meeting of this Association, and as often during that week as may be necessary; to nominate, on the third day of each annual meeting, all the general officers of the Association (none of whom shall be members of its own body), the members of the Committee of Arrangements, the Committee on Necrology, seven members of the Judicial Council, and three members of the Board of Trustees for Publication for election by the Association; to recommend the place and time of holding the next annual meeting; and to consider and report upon all subjects that may be referred to it by vote of the Association. The presence of one-third of the whole number of members elected to the General Committee shall constitute a quorum for the transaction of business. If, at any annual meeting of the Association, it shall be found at the close of the general meeting of the first day that a quorum of the General Committee is not present, it shall be the duty of the President and Permanent Secretary to fill the vacancies in the Committee temporarily by selections from the lists of delegates registered as present from the States to which the vacancies belong.

Should this provision be adopted by the Association, the Permanent Secretary should be authorized to substitute the name "General Committee" for "*Nominating Committee*," wherever the latter occurs in other parts of the Constitution and By-laws.

The third paragraph of section *five*, as it now exists in the Constitution, provides for the annual election

of a *Committee of Publication*, charged with the performance of certain important duties. But at the annual meeting in Cleveland, 1883, all the duties of this committee were transferred by resolution to a *Board of Trustees* for journalizing the Transactions of the Association, organized at the preceding annual meeting in St. Paul. Your Committee, therefore, recommends the adoption of the following provision and its incorporation in the Constitution, as a substitute for the paragraph relating to the "Committee of Publication," viz.:

The *Board of Trustees* shall consist of nine members, three of whom shall be elected annually on the nomination of the standing General Committee, and shall serve for three years. It shall be the duty of this Board to provide for and superintend the publication and distribution of all such proceedings, transactions, and memoirs of the Associatinn as may be ordered to be published, and in such manner as the Association may direct; and in doing this, it shall have authority to appoint an editor and such assistants, and determine their salaries, and procure and control such materials, as may be necessary for the accomplishment of the work assigned to it. To further facilitate its work, it shall be the duty of the Secretaries of the Association and of the several Sections, during each annual meeting, or as soon thereafter as practicable, to deliver to the Board, or such editor or agent as it shall appoint, all such records of proceedings, reports, addresses, papers, and other documents as may have been ordered for publication, either in the general sessions or in the Sections. All moneys received by the Board of Trustees or its agents, resulting from the discharge of the duties assigned them, must be paid to the Treasurer of the Association, and all orders on the Treasurer for disbursements of money in any way connected with the work of publication, must be endorsed by the President of the Board of Trustees. It shall be the further duty of the said Board of Trustees to hold the official bond of the Treasurer for the faithful execution of his office; to annually audit and authenticate his accounts, and present a statement of the same in its annual report to the Association; which report shall also specify the character and cost of all the publications for the Association during the year, the number of copies still on hand, and the amount of all other property belonging to the Association under its control, with such suggestions as it may deem necessary.

The foregoing proposed amendment to Section V of the Constitution is simply placing in due form, and in its proper place, the actual regulations that have been in operation for the past four years under resolutions adopted at the annual meetings of 1882 and 1883, and if it is adopted the Permanent Secretary should be directed to do the clerical work of erasing the name of "Committee of Publication," and where necessary, substituting the *Board* of *Trustees*, wherever the former occurs in other Sections of either Constitution or By-laws, in such a way as to place them in harmony with this amendment.

In addition to the foregoing proposed amendments of the Constitution, your committee recommend the following important amendments and additions to the By laws that have no necessary connection with the proposed amendments to the Constitution, viz.: To so amend the paragraph under Section II of the By-laws relating to the duties of Chairmen of Sections, that it shall read thus: "The Chairman of each Section shall prepare an address on the recent advancements in the branches belonging to his Section, including such suggestions in regard to improvements in methods of work as he may regard important, and present on the first day of its annual meeting, the same to the Section over which he presides. The reading of such address not to occupy more than forty minutes."

Hitherto, the paragraph for which this is intended as a substitute, has required the Chairmen of Sections to prepare and read addresses in the general sessions of the Association, which, on account of the increase in the number of Sections, has become impracticable. There being now eight Sections, with another proposed, and only three general sessions of the Association in which they can be read, it is obvious that one-third of these addresses must be read by title only, as has been actually done for the last two or three years, or no other business of the Association can be transacted after the first day of each annual meeting. On the other hand, if the Chairman of each Section should deliver his address at the opening of his Section, it would add much to the interest of the Section itself and afford opportunity for suggesting important improvements in methods of investigation, and tend strongly to give increased strength and greater individual attachment to each Section. It is the same method as practiced in the Sections of the British Medical Association.

Also an additional By-law, to be numbered *XIV*, as follows: "The Association shall annually elect, on the nomination of the Nominating Committee (or the standing General Committee), three members of the profession, eminent in some of its departments, to deliver addresses in the general sessions of the next ensuing annual meeting, one on some topic or topics relating to general medicine, another relating to general surgery, and the third relating to public medicine, including under that head, hygiene, sanitation, prophylaxis, education and medical legislation; each of such addresses not to exceed one hour in its delivery."

This suggestion is also in accordance with the practice of the British Medical Association, and its advantages cannot fail to commend it to the favorable consideration of all thoughtful members of this body.

In conclusion, your Committee will only add, that all the changes recommended in this report have for their object the better adjustment and more efficient practical development of the systematic general organization of the medical profession of our country, on those principles of equality and just representation in strict consonance with the habits of our people and the institutions of our country; and which afford the only basis on which the whole regular profession may be brought together in local professional intercourse, and through chosen representatives into State and National communion, where every legitimate special-

ist finds an appropriate field for work in some one of the Sections, and at the same time is enabled to mingle in the general sessions with the great body of general practitioners, to the mutual benefit of all. In union there is not only *strength* and *harmony*, but the most sure and rapid progress, while exclusive organizations and class distinctions beget prejudice, foster divisions and retard true progress. All of which is respectfully submitted.

N. S. DAVIS, J. M. TONER,
WM. BRODIE, E. H. GREGORY,
P. H. MILLARD, W. H. PANCOAST,
W. B. WELCH, W. C. WILE.
Committee.

Dr. Albert L. Gihon, U. S. N., the remaining member of the Committee was not present at the conference when the report was adopted.

Dr. R. C. Early, of Penna., moved that the report be accepted and the Committee discharged.

Dr. A. S. von Mansfelde, of Neb., moved that the report be adopted. The motion was adopted.

Some discussion having arisen relative to the matter, Dr. Eugene Grissom, of N. C., arose to a point of order, that this action was final and hence the changes proposed by the Committee did not lie over.

The Chair decided that this was correct, and that changes recommended by the Committee had been adopted.

Some further discussion having arisen, Dr. A. N. Bell, of N. Y., offered the following:

Resolved, As the sense of this Association, the question has already conformed to the Constitution, having been before it one year.

A call of the house having been demanded, a vote standing was taken, resulting in 272 in the affirmative and 232 in the negative.

A motion to reconsider the vote was, on motion of Dr. E. Grissom, laid upon the table.

The Permanent Secretary then called the roll of States and announced the following as the

COMMITTEE ON NOMINATIONS.

Ala., W. C. Cross; Ark., D. C. Ewing; Cal., J. W. Robertson; Col., P. Brumund; Conn., W. H. Whittimore; D. C., J. M. Toner; Fla., M. B. Phillips; Ga., A. G. Whitehead; Ill., E. P. Cook; Ind., T. B. Harvey; Iowa, Wm. Watson; Ks., W. L. Schenck; Ky., D. S. Reynolds; La., T. G. Richardson; Me., D. E. Marston; Md., T. B. Evans; Mass., E. W. Cushing; Mich., W. Brodie; Minn., J. A. McGauhey; Miss., T. R. Trotter; Mo., J. M. Allen; Neb., W. M. Knapp; N. C., Eugene Grissom; N. H., J. W. Parsons; N. J., Lott Southard; N. Y., Darwin Colvin; Ohio, X. C. Scott; Pa., E. A. Wood; R. I., W. J. Burge; S. C., T. Legaré; Tenn., J. B. Murfree; Tex., R. W. Park; Vt., S. H. Griswold; Va., H. M. Nash; W. Va., J. E. Reeves; Wis., J. K. Bartlett; U. S. N., D. Blood good; U. S. M. H., H. M. Goldsborough; Dak., E. L. Dals; N. M., R. Bailey.

A communication from the American Pharmaceutical Association was presented, enclosing the following:

Resolved, That this Association solicit the aid and cooperation of the A. M. A. in promoting the prescribing by physicians of officinal medicines only, or such preparations as have published formulas in preference to others.

On motion, the resolution was adopted.

DR. J. S. LYNCH, of Baltimore, Chairman of the Section on Practice of Medicine, delivered the

ADDRESS IN MEDICINE.

[See JOURNAL, June 18.]

On motion, it was referred for publication.

On motion, the Association adjourned until Thursday at 10 A.M.

THURSDAY, JUNE 9—THIRD DAY.

The President called the Association to order at 10 A.M., and prayer was offered by Rev. J. H. Barrows, D.D.

The Committee of Arrangements announced a number of invitations, etc. Two charges against members, of an ethical character, were presented, and referred to the Judicial Council.

A congratulatory telegram was read by the Permanent Secretary, from the Ontario Medical Association, then in session. On motion of Dr. William Brodie, it was received, and the President was requested to send a response. His reply was: "The President and members of the American Medical Association acknowledge the friendly greeting of the Ontario Medical Association, and desire to convey to them their feelings of sympathy and good fellowship."

Dr. Brodie, as Chairman of the Committee on Nominations, reported the following

OFFICERS FOR THE ENSUING YEAR.

President—Dr. A. Y. P. Garnett, Dist. of Col.

Vice-Presidents—Drs. Duncan Eve, Tenn.; Darwin Colvin, N. Y.; Charles J. O'Hagan, N. C.; A. Stedman, Col.

Librarian—Dr. C. H. A. Kleinschmidt, D. C.

Treasurer—Dr. R. J. Dunglison, Pa.

Assistant Secretary—Dr. Jos. Ransohoff, Ohio.

The place for next meeting is Cincinnati, on the second Tuesday in May, 1888. Chairman of Committee of Arrangements, with power to appoint members of Committee, W. W. Dawson, of Cincinnati.

Trustees of THE JOURNAL—Drs. L. Connor, Mich.; E. O. Shakespeare, Pa.; W. T. Briggs, Tenn.

Judicial Council—Drs. J. H. Murphy, Minn.; Joseph M. Toner, D. C.; J. K. Bartlett, Wis.; A. B. Sloan, Mo.; X. C. Scott, Ohio; B. McClure, Iowa; D. W. Stormont, Kas. To fill a vacancy, James F. Hibberd, Ind.

Committee on State Medicine—Ala., Jerome Cochrane; Ark., R. G. Jennings; Cal., J. W. Robertson; Col., P. Brumund; Conn., W. H. Whittimore; D. C., G. W. Cook; Fla., N. D. Phillips; Ga., T. S. Hopkins; Ill., E. P. Cook; Ind., J. M. Beard; Iowa, G. F. Jenkins; Kas., W. L. Schenck; Ky., J. A. Larrabee; La., T. G. Richardson; Me., Thos. Foster; Md., G. H. Rohé; Mass., Grace Wolcott; Mich., A. W. Alvord; Minn., C. N. Hewitt; Miss., T. R. Trotter; Mo., Lester Hall; Neb., Wm. Knapp; N.

C., Eugene Grissom; N. H., W. P. Porter; N. J., B. A. Watson; N. Y., A. N. Bell; Ohio, F. C. Bain; Pa., J. C. Dunn; R. I., W. J. Burge; So. C., T. Legare; Tenn., R. Cheatham; Texas, J. E. Sears; Vt., S. H. Griswold; Va., H. M. Nash; W. Va., J. E. Reeve; Wis., J. K. Bartlett; U. S. N., Delavan Bloodgood; U. S. M. H., C. B. Goldsborough; Dakota Ter., E. M. Dow; New Mexico, R. Bailey.

Committee on Necrology.—J. M. Toner, Washington, D. C., Chairman; T. E. Murrell, Ark.; B. B. Wyman, Ala.; J. G. Terry, Cal.; M. H. Sears, Col.; R. A. Lancaster, Fla.; E. Ingalls, Ill.; J. F. Hibbard, Ind.; J. M. Emmert, Iowa; L. M. Minney, Kas.; J. G. Brooks, Ky.; R. Matas, La.; John Morris, Md.; E. C. Bell, Mass.; G. E. Ramsey, Mich.; A. W. Strickfield, Minn.; H. B. Merrill, Mo.; A. S. von Mansfelde, Neb.; J. H. Tucker, N. C.; J. F. Ill, N. J.; J. W. Parsons, N. H.; L. D. Trowbridge, N. Y.; J. H. Tucker, N. C.; H. J. Herrick, Ohio; F. Woodbury, Pa.; W. J. Burge, R. I.; F. L. Parker, S. C.; J. M. Savage, Tenn.; R. W. Park, Tex.; M. R. Crane, Vt.; L. Ashton, Va.; J. T. Reeve, Wis.; J. N. Weir, Dakota; R. Bailey, New Mexico.

On motion of Dr. P. H. Millard, the report was accepted.

The Permanent Secretary read the officers for the Section on Dermatology and Syphilography, Chairman, L. D. Bulkley, N. Y.; Secretary, T. F. Dunlap, Kentucky.

Section on Obstetrics and Diseases of Women—Chairman, Eli Van de Warker, N. Y.; Secretary, E. W. Cushing, Mass.

Section on Anatomy and Surgery—Ch'n, Donald McLean, Mich.; Sec'y, B. A. Watson, N. J.

State Medicine—Ch'n, H. B. Baker, Mich.; Sec'y, S. T. Armstrong, Tenn.

Diseases of Children—Ch'n, F. E. Waxham, Ill.; Sec'y, W. B. Lawrence, Ark.

Oral and Dental Surgery—Ch'n, J. Taft, Ohio; Sec'y, E. S. Talbot, Ill.

Practice of Medicine, Materia Medica and Physiology—Ch'n, A. B. Palmer, Mich.; Sec'y, N. S. Davis, Jr., Ill.

On Medical Jurisprudence—Ch'n, E. M. Reid, Md.; Sec'y, C. B. Bell, Mass.

Dr. N. S. Davis, Sr., having mentioned the necessity of appointing members to prepare the three addresses, in accordance with the amendments which had been adopted, after some discussion Dr. D. J. Roberts, of Tenn., moved that action on this point be deferred until 1888. Dr. Davis moved as an amendment that the action as to the By-Laws be permitted to remain, inasmuch as there were very few negative votes, but that the others, which were amendments to the Constitution, should lie over for ratification at the next meeting. This was accepted by the mover, and was unanimously adopted.

Dr. G. H. Rohé, Secretary of the Rush Monument Committee, read the

REPORT OF THE RUSH MONUMENT COMMITTEE.

Report of the Chairman.—On the part of the Rush Monument Committee, I beg to report progress made in furtherance of the great project, which has been entrusted to them. Since its inception, they have been gratified by the concurrent testimony of many of the ablest members of the profession, and by the enthusiastic endorsement of numerous State and other Medical Societies as to the pre eminent claim of Benjamin Rush to be commemorated as proposed. Without ascribing to him excellence above criticism, it must be admitted that he was so prominent a figure in his profession and in public affairs during our Revolutionary period, and filled so many parts and all so well in the early history of the Republic, that at this day he stands among the fathers of the Nation, the unquestioned peer of the heroes of that time, whatever their vocation.

The Committee are aware that there were many other noble and patriotic men in the ranks of our profession, who have deserved the grateful recognition of their country, but it is doubtful whether in the instance of any other individual so many reasons do exist for preference for this intended distinction. These were set forth in the earlier report of the original committee, [*vide* JOURNAL OF AMERICAN MEDICAL ASSOCIATION, Vol. IV, No. 21, p. 581.] and in the later circular addressed to the members of the profession of medicine in the United States, but the present Committee may be permitted to again remind their professional brethren that Benjamin Rush was a physician who was eminent as a practitioner, both in private life and on the hospital staff, who fearlessly combatted the pestilential diseases that were common in his day and by one of which he lost his life; who was eminent as a teacher, having assumed the office of professor at the age of 24, and retained that dignity almost half a century, his private pupils having numbered about 2000; who was eminent as a writer, his printed works filling seven volumes, of which his treatise on Insanity in its medical and medico legal relations was for seventy years the standard authority on that subject in Europe as in our own country; who, with all the demands of his busy professional life, was also eminent, as a philanthropic, patriotic citizen, the exemplar of the physician's proper office in public life, an active participator in the events of the memorable period of the Nation's birth, a signer of the Declaration of Independence, a member of the Convention which framed the Constitution of the United States, a general officer of the Revolutionary Army, the Surgeon General and Physician General of the Middle Department; who, in later years, filled many offices of public trust, having been the first Treasurer of the United States Mint and the Port Physician of Philadelphia; who was a leader in every project of social reform, and as alive to the importance of public health questions as any modern sanitarian, the first President of the Society for the Abolition of Slavery, the advocate of the higher education of women, of the establishment of public schools, of the abolition of the death penalty, of legislation against the abuse of alcohol, of the amelioration of the treatment of the insane, etc.

Dr. Thomas G. Morton on the 17th of December, 1885, addressing the Association of Resident Physicians of Pennsylvania Hospital, of which Dr. Rush

was a physician for thirty years, extols him as "one of the most notable men of his time," and attributes to him the expression of views, "which were half a century in advance of the times."

Especially noticeable, because of the occasion, was the tribute to Dr. Rush's fame by Dr. Weir Mitchell, President of the College of Physicians of Philadelphia, in his classic and eloquent commemorative address on the 4th of January, of the present year, at the centennial anniversary of the institution of that distinguished body. Dr. Mitchell emphasized Rush as "the greatest physician this country has produced." "He was a statesman, a scholar, an army surgeon, a punctual and careful physician, an actively religious man, a far seeing and courageous philanthropist, and a sanitarian far in advance of his day. There are what I might call four careers, in all of which he excelled unaided by secretaries or modern means of condensing and relegating labor; one such suffices most men. He was a member of every important political assembly which met in this State while he lived. When timid men fell out of the Continental Congress, he was elected to that body, that he might sign the Declaration of Independence, and he was the only practising physician whose name is on that energetic arraignment of the Crown."

In the words of Dr. Charles K. Mills, President of the American Neurological Association, in his recent address before the Medico Legal Society of New York, on "Benjamin Rush and American Psychiatry:" A Rush renaissance now seems to be imminent, and it is a strange commentary upon patriotism that the leaders in this movement are two Englishmen, who have recently given us excellent biographical sketches. The first of these appeared in October, 1885, from the pen of Dr. Benjamin Ward Richardson, in his Asclepiad—in which Rush's position in medecine is carefully analyzed and asserted, and in which also attention is directed to his standing as patriot, politician, philanthropist, orator, teacher, and man of letters. The second is contained in the recent monograph of Dr. D. Hack Tuke, on "The Insane in the United States and Canada," who calls him the American Fothergill, saying that he resembled the latter in the independence of his medical practice, in acuteness of observation, in his enthusiastic love of the art of healing, in his incessant labor, in popularity as the leading physician of the day in a great city, but above all, in uniting with the functions of a physician, the philanthropy which manifested itself in innumerable practical suggestions for the benefit of his kind, and in the daily exemplification of Terence's immortal axiom. "Rush has been called the American Sydenham, first by Lettsom, who said of him that he approached, if not exceeded Sydenham in grandeur and compass of thought. By his American admirers and eulogists he has often been spoken of as the American Hippocrates," but adds Dr. Nutts, "perhaps it is unjust to compare him with anyone. He was a character, peculiar, striking, unique."

With such a man to honor, the profession of medicine would neglect a sacred duty in failing to do this honor, and the Committee, accordingly, earnestly appeal to the physicians and medical students of America to make the modest individual contribution of $1 apiece, which from their numbers, will swell to an amount sufficient to make their memorial the most imposing at the National Capital. The great National medical library and museum, which under the auspices of the Medical Department of the Army will soon be completed, offers a fitting locality for the proposed monument. As the statue of Professor Henry stands at the approach to the Smithsonian Institution, which was so honored by his charge, and that of Chief Justice Marshall at the ascent to the Supreme Court of the United States, over which he had so long presided, what more appropriately could first meet the physician, who visits this great depository of medical literature, science and art than the benevolent features of so great a Master in Medicine as Benjamin Rush?

All which, with the reports of the Secretary and Treasurer, is respectfully submitted.

ALBERT L. GIHON, M.D.,
Chairman Rush Monument Committee.

Report of the Secretary.—The Secretary of the Rush Monument Committee reports that he has endeavored to faithfully perform the duties of his office during the past year. In a book procured for the purpose, he has kept a succinct and accurate history of the Committee and its proceedings.

Since the last meeting of the Association an appeal to the medical profession, in aid of the fund, has been printed and distributed through the local chairmen, in all parts of the United States. The power of the press, both professional and popular was invoked, and the response of this mighty engine of public opinion was prompt and generous.

In the instructions issued to local committees, the method of collecting funds was left to their discretion. The wisdom of this action has been demonstrated by the good results achieved. In the opinion of the Secretary this policy should be continued as the most likely to accomplish the object of the committee's endeavors.

The medical profession of this country has resolved, through its representative organization, the American Medical Association, *that this memorial shall be built.* The committee to whom the labor of collecting the necessary funds has been entrusted, will be diligent in the performance of its duty. It now devolves upon every physician having the honor and dignity of his profession at heart, to give the trifle asked. If every one who hears or reads this report will send his first succeeding fee to the treasurer, the desired result will soon be attained. If there is love of patriotism, of philanthropy, of learning and of self-sacrifice in the hearts of the physicians of this country, the noble example of Benjamin Rush in each of these spheres of a well rounded life, should stir up such enthusiasm that in one year from this time the committee's work would be accomplished.

The contribution asked from each is but small. Every one can give it. Let us all then say, with King Henry at Agincourt:

"A very little let us do,
And all is done."

GEORGE H. ROHÉ,
Secretary Rush Monument Committee.

Report of Treasurer.—The treasurer of the Rush Monument Committee begs leave to submit, this, his first report on the financial condition and prospects of the enterprise. The president of the committee, Dr. Gihon, in his report, which I have had the opportunity of reading, has graphically presented the history and purpose of the project and shows the eminent propriety there is in the medical profession placing a statue at the National Capital to honor the foremost medical man that our country has produced. This view which had become quite general found expression in the appointment of a standing committee by the American Medical Association, at its meeting in 1885, charging it with the special duty of raising funds and erecting in Washington city a suitable monument to Dr. Benjamin Rush, whose learning, professional eminence and patriotic services easily place him at the head of the many worthies of our noble profession in America.

That the monument may, as far as practicable, represent the universal esteem in which the memory of Dr. Rush is held by the medical profession everywhere, it was deemed advisable to invite the medical men in every State and Territory of the United States to aid, by small contributions, in this testimonial.

The secretary of the Rush Monument Committee, Dr. Rohé, in his report, which I have also seen, shows how through the agency of a member of this committee resident in each State and Territory, the Army, Navy, and Marine Hospital Service, the profession has been everywhere solicited to join in this work. Responses making partial returns to the treasurer from the members of the committee in the following States have been received: Arkansas, California, Colorado, Connecticut, Indiana, Kansas, Maryland. New Hampshire, New Jersey, New Mexico, New York, Ohio, Pennsylvania, Vermont, West Virginia, U. S. Army, U. S. Navy and U. S. Marine Hospital Service. The States and Territories not named have not made returns to this date, June 2, 1887, although some of them, we hear, are at work in the matter. The information received from the members of the committee in the several States is to the effect that the project meets the hearty approbation of the medical men of their section, and that contributions will in time become so general as practically to include every physician of note in the country.

To the end that the profession may know with what degree of prudence the money raised for the Rush Monument is being husbanded, I deem it proper to refer briefly to the rules adopted by the committee when it organized for business, touching this important matter. They require that the names of all contributors, with the amounts given, shall be entered in a book kept for the purpose, and that a receipt, or certificate, for the same, signed by the treasurer, be transmitted to the donor.

That all moneys received shall be deposited by the treasurer in the bank of Riggs & Co., in Washington, to the credit of the Rush Monument Committee. That no debts shall be contracted by individual members of the committee, not authorized by a vote of the committee, except the necessary expenses of postage and printing, and these must have the concurrent sanction of the President, Secretary and Treasurer. And that no moneys shall be drawn from the treasury except upon vouchers bearing the endorsement of the President and Secretary of the committee. These regulations have all been observed. The register of the names of contributors, the bank book of deposits, and all vouchers for expenses thus far incurred, are herewith submitted for such action as the Association may deem proper to take.

The total sum which has been sent to the treasurer amounts to $389.

The total amount disbursed, as per vouchers, numbered from 1 to 8, inclusive, amounts to $143.08.

The ratio of expense in future will not be so great, as the printing of blanks will serve for a year or more. It is possible that the amount received by the treasurer may be less than the Association and the public might reasonably have expected. The fact, however, should be kept in mind, that the committee has just begun work, and that this report embraces returns from but about one half the States and but partial returns from any.

Appended to this report is an alphabetical list of the names of all contributors, with their post office address, and the amounts given by each. All of which is respectfully submitted.

J. M. TONER,
Treasurer Rush Monument Committee.

The following was received from Dr. D. Hack Tuke:

LYNDON LODGE, HANWELL.

My Dear Doctor:—Allow me to wish success to your Rush monument. You know, from my short biography of him in my book on your asylums, how much I venerate and desire to perpetuate his memory. I should have felt it an honor to send a trifle to the subscription list as a sign of my appreciation of your labors, but I believe donations are confined to your own country. Very truly, D. HACK TUKE, M.D.

DR. TONER, Washington, D. C.
May 25, 1887.

CONTRIBUTORS TO RUSH MONUMENT FUND.

Adams,[1] F. J. Surg. U. S. A., Ft. Assiniboine, W.T.; Allen, Charles Q., Rutland, Vt.; Allen, John F., Batesville, Ark.; Appel, A. H., Surg. U. S. A., Ft. Reno, I. T.; Appel, D. M., Surg. U. S. A., Jackson Barracks, La.; Armstrong, S.T., P.A. Surg., Marine Hosp. Service; Arnold, E.S., New York; Arthur, Geo., U. S. N.; Ash, H., St. Clair, Phila.; Ashmead, Wm. (for the Ashmead family) $54.00; Atkins, Francis H., Las Vegas, N. M., $2.00; Atkinson, J. E., Baltimore, Md.; Azel, Earnest W., U. S. N.

Bailhache, Preston H., U. S. Marine Hosp. Service; Beary, E. H. Philadelphia, Pa.; Benton, H.G., Surg. U.S.A., Ft. Assiniboine, W.T.; Biddle, A.W., Philadelphia, Pa.; Biggs, H. M., New York; Bowen, A.B., Maquoketa, Ia.; Boynton, Chas. H., Lisbon, N. H.; Bradley, J. E., A. A. S., U. S. Marine Hosp. Service; Bradley, Michael, U. S. N.; Bralleir, E., Chambersburg, Pa., $2; Brodie, Wm., Detroit, Mich.; Brooks, S.D., P. A. Surg. U. S. Marine Hosp. Service; Bulkley, L.D., New York; Bunting, Ross R., Philadelphia; Busey, S.C., Washington, D.C.; Bush, G. R., U. S. N.

Cadwalader, Charles E., Philadelphia, Pa.; Carbee, Sam'l P., Haverhill, N. H.; Carlin, P.V., Denver, Col.; Carmichael, D. A., P. A. Surg. Marine Hosp. Service; Carroll J.V., Surg.

[1] When not otherwise specified the amount is $1.00.

U. S. A. Ft. Assiniboine, W.T.; Chambers, J. W., Baltimore, Md.; Chase, R. H., Norristown, Pa.; Clark, Asa, Stockton, Cal.; Cleary, P. J. A., U. S. A., Ft. Union, N. M.; Cline, Galen L., Surg. U. S. A., Ft. Assiniboine, W.T.; Conn, G.P., Concord, N. H.; Cones, S. F., U.S.N., Naval Hosp., Chelsea, Mass.; Cox, G.W., Denver, Col.; Craig, Alex., Columbia, Pa.; Crawford, M. H., U. S. N.; Crawford, S. P., Stockton, Cal.; Curtin, R. G., Philadelphia, Pa., $2; Carpenter, Wesley M., New York; Carrington, P. M., P. A. S. U. S. Marine Hosp. Service.

Dacosta, J. M., Philadelphia, Pa.; Davis, J.C., Denver, Col.; Davis, N.S., Sr., Chicago, Ill., $5; Davison, J. H., Los Angeles, Cal.; Deckret, J.F., Baltimore, Md.; Denison, Chas., Denver, Col.; Derr, E. Z., U. S. N.; Dibrell, J. A., Jr., Little Rock, Ark.; Dickson, John, Baltimore, Md.; Dorman, H. W., A.A.S. Marine Hosp Service, $2; Drake, M. E., Mount Alton, Pa.; Dunton, W R., Philadelphia, Pa.

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Fenton, T. H., Philadelphia, Pa.; Ferguson, E. D., Troy, N.Y.; Fleming, A., Pittsburg, Pa., $5; Forman, S. B., Lancaster, Pa.; Franklin, Gustavus Scott, (from Ross Co., Ohio, Medical Society) $5; Fullerton, J. L., Charleston, W.Va.

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Hall, J. E., Brookville, Pa.; Hallock, Wm. E., Pittsburg, Pa.; Hamilton, J. B., Surg. General, Marine Hosp. Service; Hammond, J. B., Baltimore, Md.; Hargis, R.B.S., A.A. Surg. Marine Hosp. Service; Harlan, Geo. C., Philadelphia, Pa.; Harmon, Geo. E. H., U. S. N.; Hefenger, A. C., U. S. N.; Heizman, C. L., Surg. U.S.A., Oswego, N. Y.; Henderson, J. P., Newville, Ohio; Herr, A. J., Lancaster, Pa.; Herr, M. L., Lancaster, Pa.; Hinkle, A. G. B., Philadelphia, Pa.; Hoheling, A., U. S. N., Hallowell, Frank, A. A. Surg. Marine Hosp Service; Hudson, A., U. S. N., Allegheny City, Pa.; Hull, G. S., Chambersburg, Pa.; Hunt, L. C., Parkersburg, W. Va.; Hunt, Wm., Philadelphia, Pa.; Hunter, S. B., A. A. Surg. Marine Hosp. Service, $5; Hutcheson, J. C., Brooklyn, N. Y.

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Neff, John, Baltimore, Md.; Newman, Robert, New York, N. Y.; Norfleet, Ernest, U. S. N., Mare Island, Cal.

Orr, Wm. P., Asst. Surg. Marine Hosp. Service; Orto, Z., Pine Bluff, Ark.

Patterson, John, Capt. U. S. A., Ft. Assiniboine; Payton, Daniel, Stockton, Cal.; Pepper, Wm., Philadelphia, Pa.; Polhemus, A. S., Surg. U. S. A., Ft. Halleck; Phillips, Thomas, Stockton, Cal.

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Sajous, Charles E., Philadelphia, Pa.; Sartor, D. R., Alto, La.; Savery, Wm., Bryn Mawr, Pa.; Schultz, S. S., Danville, Pa.; Schwintz, G. E., Philadelphia, Pa.; Scofield, W. K., U. S. N.; Seip, M. S., Danville, Pa.; Shaw, Charles S., Pittsburgh, Pa.; Sheppard, J. E., Atlantic City, N. J., $2; Shurtliff, G. A., Stockton, Cal.; Skillern, S. R., Philadelphia, Pa.; Smart, Ch., Surg. U. S. A., Washington, D. C.; Smith, H. H., Philadelphia, Pa.; Smith, Q. C., Austin, Tex.; Smith, S. S., Driftwood, Pa.; Sparkman, G. E. T., A. A. Surg. Marine Hosp. Service; Spear, I. C., U. S. N.; Sposati, N., Stockton, Cal.; Spring, John V., Pine Bluff, Ark.; Squibb, E. R., Brooklyn, N. Y.; Steinmetz, W. R., Surg. U. S. A., Baltimore, Md.; Stephenson, W., Surg. U. S. A., Rock Springs, Wyo.; Stoner, G. W., Marine Hosp. Service; Stoner, James B., Marine Hosp. Service; Streets, Thos, H., U. S. N.; Strittmater, N. P., Philadelphia, Pa.; Stryker, S. S., Philadelphia, Pa.; Styer, Charles, A. A. Surg. Marine Hosp. Service; Swan, S. M., Johnstown, Pa.; Sweett, John L., Newport, N. H.

Taylor, L. H., Wilkesbarre, Pa.; Taylor, W. E., U. S. N.; Thayer, Alvin, Erie, Pa.; Thayer, W. H., Brooklyn, N. Y.; Thompson, J. Ford, Washington, D. C.; Thompson, Wm., Little Rock, Ark.; Tipton, W. R., Las Vegas, N. M., $2; Todd, F. Walton, Stockton, Cal.; Toner, J. M., Washington, D. C.

Vansant, John, U. S. Marine Hosp. Service; Vogler, G. W., Philadelphia, Pa., $2; Voigt, C. H., Allegheny City, Pa.; Vollum, E. P., Surg. U. S. A., San Antonio, Tex.

Washington, W. A., Stockton, Cal.; Watkins, C., Little Rock, Ark.; Watson, Irving A., Concord, N. H.; Watson, C. J., Watson, Iowa; Welch, W. B., Fayettville, Ark.; Wells, Howard, U. S. N.; Wharton, H. R., Philadelphia, Pa.; White, L. C., Van Buren, Ark.; Whiting, Robert, U. S. N.; Wilcox, T. E., Surg. U. S. A., Washington, D. C.; Williams, Arthur, Elkridge, Md.; Williams, E., Cincinnati, O., $2; Williams, W. H., Brooklyn, N. Y.; Wilson, J. C., Philadelphia, Pa.; Wilson, Robt. T., Baltimore, Md.; Wilson, W. E., Denver, Col.; Winslow, G. F., U. S. N.; Woodhull, A. A., Surg. U. S. A., David's Island, N. Y.; Woods, G. W., U. S. N.; Wright, J. P., Surg. U. S. A., San Antonio, Tex.

Young, J. D., Stockton, Cal.; Young, J. K. Philadelphia, Pa.

On motion of Dr. W. B. Atkinson, the report was accepted and referred to an auditing committee, consisting of Drs. E. Grissom, A. B. Palmer, and A. Garcelon.

This Committee subsequently reported that they had examined the vouchers and found the accounts correct.

Dr. Jno. Morris, of Maryland, on behalf of Dr. Jas. M. Keller, Chairman of the Committee, read the

REPORT ON CREMATION

as follows:

The Committee on Cremation, appointed at the last meeting of the Association, beg leave to report:

That no facts of a practical character, in addition to those so forcibly presented by the former Committee, have come to their notice during the year. A report made to the American Public Health Association at Toronto, last October, largely embodies the views of the Committee. In that report it is stated that it is only in the case of sudden and violent eruptions of disease or a great epidemic that the failure of the ordinary modes of burial can be realized or properly brought to the notice of the people. That as long as such outbreaks do not occur, no particular attention is given to the matter by the profession or the laity; that inasmuch as cremation has not met with popular acceptance, a modified form of cremation, called by Liebig cremacaucus, might be adopted. This looks to the adoption of municipal and State laws, compelling the use of destructive agents to bring about the rapid disintegration of the dead body. Caustic lime or chloride of zinc are especially fitted for this office. This process of immediate destruction of the dead body is particularly desirable in cases of persons dying of zymotic diseases. The burial of persons dying by these diseases should be placed by law in the hands of the health authorities. The old fashioned triple coffin and vault should be entirely discarded. Earth to-earth burial should, as far as possible, be encouraged. As our cities increase, as our populations thicken, the evils of our present mode of burial will increase. In the end it will be discovered that cremation is the purest, safest means of escape from the evils incident to decomposition of the dead.

The report closed with the following resolution:

Resolved, That it is the judgment of the American Medical Association that the burial of all persons dying of zymotic diseases should be placed by law under the control of the health authorities, and that in all such cases of disease chemical agents should be used by such authorities to bring about a rapid disintegration of the dead body.

The report was referred to the Section on State Medicine at the request of the special committee.

Dr. J. McF. Gaston, of Georgia, Chairman of the Special Committee on the

PREVENTION OF YELLOW FEVER BY INOCULATION,

offered the following:

WHEREAS, An appropriation has been made by Congress for investigating yellow fever inoculation, and an eminent bacteriologist has been appointed to examine the data presented in Mexico and Brazil,

Resolved, That it is desirable that two other members of the medical profession should be associated in this work, one having practical and clinical acquaintance with yellow fever, and the other being qualified to communicate with the population of the respective localities;

Resolved, That a committee of three be appointed by the President of this Association to communicate this action to President Cleveland, setting forth the grounds for such recommendation.

A motion by Dr. G. H. Rohé to lay it on the table was lost, and the resolutions were adopted. Dr. Rohé moved a reconsideration, which was lost.

On motion of Dr. N. S. Davis, it was agreed to proceed with the regular order, as the By-laws require that new and miscellaneous business of this kind should be considered only on the first and fourth days of the session.

The Address in Obstetrics was read by Dr. F. M. Johnson, of Missouri, Chairman of the Section.

The Address in State Medicine was read by Dr. G. H. Rohé, of Maryland, Chairman of the Section.

The Address on Diseases of Children was read by Dr. J. S. Knox, of Illinois, Chairman of the Section.

These addresses were referred for publication.

The Permanent Secretary read the

REPORT OF THE TREASURER.

I have the honor to report that the receipts to the treasury of the Association during the interval between the two annual meetings have amounted to the sum of $21,723.22; the expenditures to $20,319.45, leaving a balance in the treasury at this time of $1,403.77. There is nothing further of interest to report or suggest at this time. All of which is respectfully submitted. RICHARD J. DUNGLISON,
Treasurer.

June 9, 1887.

He also read the report of the Librarian, which asked an appropriation of $10 to the *Index Medicus*. On motion, this was granted.

He next read a communication from the Chairman of the Committee on Finance of the Ninth International Medical Congress, asking aid.

Dr. Davis moved to appropriate $500. An amendment was offered to make it $1,000. This was adopted.

Dr. Davis announced two resolutions which he asked should be considered on Friday morning. On motion of Dr. J. F. Hibberd, they were made the special order after the Addresses.

Dr. J. H. Hobart Burge, of Brooklyn, offered the following resolutions, which were adopted:

Resolved, That the Committees of Arrangements of the American Medical Association be expected hereafter to adopt efficient means to prevent conversation and loitering in the vestibule and all ante-rooms or the hall in which the general meetings of the Association are held.

Resolved, That it be the duty of the Permanent Secretary to place a copy of this resolution in the hands of each succeeding Committee of Arrangements.

The Association adjourned until Friday, at 10 A.M

FRIDAY, JUNE 10—FOURTH DAY.

The President called the Association to order at 10 A.M., and prayer was offered by Rev. W. H. Vibbert.

The Committee of Arrangements announced two charges against members; they were referred to the Judicial Council.

The final report of the Nominating Committee was read. The following physicians were appointed to deliver addresses at the next meeting: On General Medicine, Dr. R. Beverly Cole, San Francisco, Cal.; Surgery, Dr. E. M. Moore, New York; Public Medicine, Dr. James L. Cabell, Virginia.

A committee consisting of Drs. J. M. Toner, Eugene Grissom, and Darwin Colvin, was appointed to notify those selected to deliver addresses, and in case of declination or death, to fill the vacancy.

Surgeon-General Hamilton, of the U. S. Marine Hospital Service at Washington, offered the following resolution, in relation to the investigation of the prevention of yellow fever by inoculation:

WHEREAS, The President of the United States has appointed George M. Sternberg, Surgeon U. S. Army, to proceed to Mexico and Brazil for the purpose of investigating the method there practiced for the prevention of yellow fever by inoculation;

WHEREAS, This report will be accompanied by photo-micographic illustrations of the appearance of the principal organs of the body affected by yellow fever: therefore, be it

Resolved, That the Senate and House of Representatives be requested to cause such number of copies of Dr. Sternberg's report to be printed as may be needed by the profession of medicine of the United States; be it further resolved, that the resolution on this subject passed yesterday be rescinded.

Dr. J. McF. Gaston objected that it was not in order. After some discussion, the previous question was demanded by the proper number. It was decided in the affirmative by a large vote, and the resolution of Dr. Hamilton was then adopted.

The Address on Dental and Oral Surgery was read by Dr. J. S. Marshall, of Illinois, Chairman of the Section.

The Address on Medical Jurisprudence was read by Dr. I. N. Quimby, Chairman of the Section.

On motion of Dr. A. N. Bell, it was agreed that the Committees should be appointed as requested in this Address.

The President appointed them as follows:

Criminality of Fœticide and Measures for its Prevention—I. N. Quimby, N. J., W. B. Atkinson, Pa., W. H. Byford, Ill.

Duties Commonly Exercised by Coroners—H. O. Marcy, Mass, J. H. H. Burge, N. Y., W. W. Dawson, Ohio.

Dr. J. M. Toner reported that the necrological notices had been published as before.

The report of the Auditors was presented and accepted:

The undersigned, Auditing Committee of the accounts of the Treasurer of the American Medical Association, and also of the Treasurer of the Board of Trustees, report that they have carefully examined the accounts of said officers, and find them correctly cast and properly vouched, and that the balances are as reported by said officers to the Association. In behalf of the Auditing Committee,

ALONZO GARCELON, *Chairman*.

Dr. Davis, of the Committee on Meteorological Investigations, etc., reported progress. On motion of Dr. Brodie, the report was accepted and the Committee continued.

Dr. Davis offered the following:

Resolved, That the regular graduates of such dental and oral schools and colleges as require of their students a standard of preliminary or general education, and a term of professional study equal to the best class of the medical colleges of this country, and embrace in their curriculum all the fundamental branches of medicine, differing chiefly by substituting practical and clinical instruction in dental and oral medicine and surgery, in place of practical and clinical instruction in general medicine and surgery, be recognized as members of the regular profession of medicine, and eligible to membership in this Association on the same conditions and subject to the same regulations as other members.

This was adopted by a large majority.

Dr. N. S. Davis read the following:

Resolved, That the Committee of Arrangements are hereby directed at each annual meeting of the Association, to so arrange the programmes regarding entertainments and receptions, that the evening of the third day be reserved for a regular annual dinner under the following general regulations: The chief registration officer shall provide for each registration table a paper headed, "Annual Dinner of the American Medical Association," with two columns for names, one headed tickets without wines or liquors at a specified sum; the other tickets with wines, etc., at a specified sum; that each member when registering can have the opportunity to take a ticket for the dinner if he desires it, and can be entirely free to enjoy the dinner not only without using wines, but also without being required to assist in paying for that drank by others; while those who desire the addition of wines will enjoy the same liberty. It shall be the duty of the Committee of Arrangements to select a proper place for the dinner, to ascertain the cost per plate on the plan already indicated, that the price paid for the tickets will pay the entire cost of the dinner, leaving no part to be paid either by the local profession or by the Treasurer of the Association.

This was also adopted by a large majority.

Dr. A. H. Wilson, Mass., offered a resolution appropriating an honorarium of $300 to the Permanent Secretary. After some discussion, Dr. Davis offered an amendment to strike out all after the word resolved, and insert the following:

WHEREAS, It has been the unswerving policy of the Trustees for the publication of THE JOURNAL, to enlarge and increase the value of THE JOURNAL as fast as the income of the Association will permit, therefore

Resolved, That said Board of Trustees be a Standing Committee on Finance to which all propositions for the appropriation of money, made hereafter, shall be referred and reported upon before final action on the same by the Association.

This was adopted. The vote was then taken on the resolution as amended, and it was adopted.

Dr. D. J. Roberts offered a resolution on Medical Education, which, on motion of Dr. Brodie, was referred to the Section on State Medicine.

Dr. J. M. Toner offered a resolution that the Presidents of each State or Territorial Medical Society be an Honorary Vice-President of this Association. On motion of Dr. D. J. Roberts, this was laid upon the table.

On motion of Dr. E. A. Wood, of Pa., the President was requested to appoint a committee of three to report on Dietetics. The President appointed as such committee Drs. E. A. Wood, of Pittsburgh, Pa., J. S. Whittaker, Cincinnati, O., and F. Woodbury, Philadelphia, Pa.

Dr. T. E. Woodbridge, of Ohio, offered a resolution to appoint a committee to examine and report upon Sanitary Locations. On motion this was referred to the Section on State Medicine.

The Permanent Secretary read a telegram from the President, Dr. A. Y. P. Garnett, thanking the Association for the honor conferred upon him.

On motion of Dr. Brodie, the thanks of the Association were tendered to the citizens and profession of Chicago, to Drs. R. N. Isham, N. S. Davis, C. Gilman Smith, and S. J. Jones, and to Mr. and Mrs. S. M. Nickerson and Mr. and Mrs. Rosenberg, and to the many who had so courteously invited the Association to enjoy their hospitalities, to the officers of the Association, and to all who had contributed to make this session a grand success.

After some pleasant remarks from the retiring President, he declared the Association adjourned to meet on the second Tuesday of May, 1888, in Cincinnati.

WM. B. ATKINSON,
Permanent Secretary.

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