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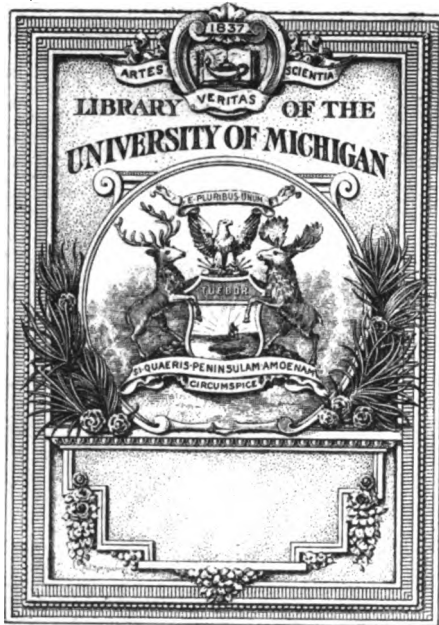
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## ORIGINAL COMMUNICATIONS.

“Qui docet discit.”

ARTICLE I.—*When to Operate for Strangulated Hernia.* By WILLIAM A. BYRD, M. D., Professor of Surgery in the College of Physicians and Surgeons, Quincy, Illinois. [Read before the Monroe, Mo., District Medical Society, November 14, 1876.]

Surgical writers differ as much, perhaps, in regard to the proper time to operate for strangulated hernia as upon any other subject coming within their special province.

All surgeons agree that taxis should be resorted to in all cases before a cutting operation is even thought of. They disagree about the length of time the taxis should be used and the amount of force that is justifiable.

I shall not quote a host of “authorities,” as “the books” are accessible to any one that desires to “read up” on the subject, but will quote from a few writers whose ability is recognized by the Profession as warranting their opinions being received with at least respectful consideration. I will report a few of the cases that have occurred in my own practice, with the conclusions I have drawn from them.

Bryant says (“Practice of Surgery,” p. 316): “The taxis should never be employed for any lengthened period. With the patient under chloroform, a femoral hernia of average size, that of a walnut, should never be manipulated for more than two minutes; half that time, or less, is usually sufficient to effect

reduction where it is to be secured; any more prolonged effort will be injurious; it should never be forcible. In large femoral herniæ, inguinal or umbilical, five minutes may possibly be allowed; but the quarter and half hour's manipulation, that is too frequently talked about, is dangerous in the extreme. In very large herniæ ten minutes may be allowed without chloroform, and periods half as long again may possibly be called for. \* \* \* \* \*

"When the taxis has failed, nothing but an immediate operation is justifiable. The operation is not of itself dangerous, although the condition that demands it is exceedingly so. It is not, and should not be, regarded as a last resource; in many cases it should be the first resource. When a patient is hanging, the first thing any one does is to cut the rope that is causing strangulation; no other means are admissible. When a piece of bowel is strangulated, the strangulating medium requires division to give it freedom; the doing of this adds nothing to the danger of the case. The danger lies in the strangulation, and this increases every minute."

On the other hand, I will quote pretty freely from an excellent article "On Irreducible Hernia," in the "Boston Medical and Surgical Journal," numbers for February 11 and March 4, 1875, written by Dr. W. C. B. Field: "So much has been said and so well said about 'delay in operating,' that I fear the too prevalent idea regarding hernia is, that if taxis together with ether does not succeed, an operation must follow, without waiting to see if the hernia be really strangulated or not, or if opium, ice, poultices, leeches, a raised position of the pelvis, persistently followed, would not do a great deal better; or whether, if some operation must be done, the pneumatic aspirator, or even the finger in some cases, so as to forcibly dilate the constriction, would not answer as well as the knife. A surgeon who is skilled in diagnosis will rarely find a case of hernia to operate on. Such a surgeon may be called timid or over-cautious, but he has often the satisfaction of knowing that surgery has suffered no injury at his hands. \* \* \* \* \*

"Temporarily irreducible or incarcerated hernia may be

attended by pain, vomiting and impossibility of voiding fæces, it may be unreturnable by taxis, and yet an operation not be demanded; nay, an operation may be highly improper, unless all these be persistent. Dr. Gross, thinks that the majority of cases called strangulated hernia do not demand immediate operation, but may be successfully treated without recourse to the knife. It is the tyro who rushes to herniotomy, who applies taxis timidly, or continues it too long. Dr. Gross, when called to operate, often contents himself with the application of the ice-bag, carefully kept from immediate contact with the skin by a double fold of flannel (an important precaution), a raised position of the lower part of the body, and a dose of chloral followed by morphine; and he frequently finds the hernia returned at his next visit. Armed with opium alone, the general practitioner may pass through a lifetime without seeing a case of hernia, especially of inguinal hernia, demanding operation by the knife."

Of the following cases occurring in my own practice, the first and second should chronologically appear as the first and fourth, but I was called to see them by a learned friend, Dr. Joseph Robbins, who reported them to the Adams County Medical Society in language so terse and true that I can do no better than to quote his manuscript.

"CASE I.—September 9, 1874, evening, Nathan Brown, colored, Hon. O. H. Browning's coachman. Right inguinal hernia of some years' standing. Had driven to town about 5:30 P. M., and leaving home hurriedly, had left his truss. While on the road the hernia developed largely, and on reaching home the pain had become intense. Saw him about an hour and a half after the accident. Found the scrotal tumor of great size, very tense, and the patient in agony. Taxis with and without chloroform failed. Called Drs. R. W. McMahan and Wm. A. Byrd, when the patient was again placed under the influence of chloroform, inverted, with his legs thrown over the shoulders of an assistant and the taxis tried. The tumor was punctured repeatedly with the needle of a hypodermic syringe, but little gas escaped. Taxis failing, the tumor was cut down upon, Dr. Byrd operating, and the stricture relieved with the knife. The



operation was completed about 10 P. M. In the course of it, it became necessary to open the sac, when about a pint of serum escaped. At the same time a '*hatful of bowel*' escaped from the scrotum and lay upon the abdomen, including the cæcum, the ileo-cæcal valve and a large quantity of the small intestine. The vermiform appendix was œdematous and nearly as large as a man's thumb. Considerable difficulty was experienced in returning the bowel after the stricture was relieved, but this was finally accomplished by inverting the patient and returning the caput coli first, when the balance easily followed. Portions of the confined bowel were deeply injected.

"The wound was closed with several points of the interrupted suture and dressed with a dry compress and a figure-of-eight bandage. Patient got half a gr. morph. sulph., hypodermically, before recovering from the anæsthesia and passed into a quiet sleep. He was kept under the influence of morphia for three or four days; the directions, which were faithfully carried out by an intelligent nurse, being to keep the respirations down to twelve and the pulse below one hundred per minute. At the end of this time, the abdominal pain and tenderness, which had been quite marked at the outset, had disappeared, together with all febrile symptoms.

"The dressings were not disturbed for three days, when it was found that primary union had taken place throughout the whole extent of the wound. All but the two lower sutures were removed. No pus ever formed in the wound, except a few drops around the remaining sutures. The bowels were moved the sixth day with citrate of magnesia. The patient was kept recumbent until he could again bear the pressure of his truss. In two weeks he was again driving his carriage, apparently as well as ever."

"CASE II.—March 15, 1875, Mrs. Quin, aged about forty years. Saw the patient about 10:30 A. M. She was suffering severe supra-umbilical pain, intermittent, and had vomited slightly the previous morning. Sunday she had walked to town, one and a half miles, having had before starting a small and rather firm alvine evacuation. After reaching town she was seized with abdominal pain, and later had another slight

evacuation. She walked home and suffered severely all night. As she was suffering intensely on my arrival, I gave half a gr. sulph. morph. hypodermically. While examining the abdomen, she called my attention to a small tumor in the right femoral region which first made its appearance two years before, but had not been constant. There was no pain at the site of the tumor, but manipulation caused some tenderness and caused it almost to disappear. Gave a full dose of cathartic medicine with directions to inform me if it failed to purge and give entire relief, and warned in case of its failing that she would be in a dangerous condition. Heard nothing from her until the evening of the next day (Tuesday, 16th), when I saw her at 5 o'clock. The purgative had been vomited soon after taking it. The relief afforded by the morphine had been complete until late in the evening, when the pain again returned, still entirely above the umbilicus, and at times very severe. Everything swallowed had been rejected. The tumor could still be felt, but was scarcely tender. Again gave half a gr. morph. hypodermically, and ordered large enemata of tepid water—all that could be forced up—frequently repeated, and a teaspoonful of sulph. magnesia every three hours. The next morning (Wednesday, 17th), went prepared to operate for strangulated hernia, taking Dr. Byrd with me. Arrived 10:30 A. M. Patient suffering severe pain (supra-umbilical), with slight intervals of ease. Pulse 100, full. Skin natural; no cold sweat; had taken but one injection the previous evening—not more than a quart—which brought away no fecal matter. The relief from the morphia had lasted about three hours. Had taken no magnesia until this morning at 7 o'clock, and it was retained until after our arrival, when it was ejected, having an unmistakably stercoraceous odor.

“The tumor was at once cut down upon, Dr. Byrd operating. Chloroform was used in very small quantity; was kindly taken and well borne. The sac was as dark as a piece of liver. On relieving the stricture the bowel slipped back under slight pressure. The sac was subsequently returned and the wound closed with iron-wire sutures. One-third gr. morph. was given hypodermically just as the patient was emerging from the anæsthesia. The temperature taken at this time was 95°; pulse 120, small.

"Half-past five P. M.—Pulse 112, full; temperature  $100\frac{1}{2}^{\circ}$ ; thirst not great. There had been a small alvine evacuation in the afternoon. No pain, but slight soreness at site of wound. Morphia per orem one-third gr. pro re nata.

"Everything went on favorably with some rise of temperature, occasionally a very small alvine evacuation and discharge of a great deal of gas per anum.

"The third day (Friday, 19th), the wound was examined for the first time. It had been dressed with a dry compress and figure-of-eight bandage. The wound looked as though primary union would occur throughout, but was somewhat irritated by contact with the urine. Had partaken sparingly of chicken soup, but had no desire for solid food. Little or no thirst. Ordered bed and body clothes changed, and morphia pro re nata.

"Saturday, 20th, A. M.—Pulse 76; respiration 16; temperature  $99\frac{3}{4}^{\circ}$ . Skin cool, soft. Tongue moist and cleaner. Abdomen tolerant of heavy pressure. Wound healthy. No pus. Daily attendance now ceased. Attempts to move the bowels with enemata of warm soapsuds failed, but on Wednesday, the 24th, ten days from the time strangulation occurred, an enormous evacuation followed repeated full doses of citrate of magnesia, described as being very offensive. Some suppuration occurred in the wound. By placing her in a position to favor drainage it soon ceased, and the wound healed. On the 6th of April the tenderness had disappeared, and a truss was adjusted and well borne."

CASE III.—About 7 P. M., December 22, 1874, I was sent for by Dr. Edson to see a patient at his office. When I got there I found a German laborer, Bernard Weinhold, somewhat beyond middle age, of thin, unhealthy look, who seemed in the greatest agony from a strangulated inguinal hernia of the right side, which was enormous in size and tympanitic. The Doctor had tried taxis, with and without chloroform, and applied snow and given morphia before my arrival. Remembering the failure of aspiration in the case of Nathan Brown, I decided to have him removed to his home, nearly a mile distant, and to cut down on the strictured point at once. He was placed in a

sleigh, well covered up, and driven home, while Dr. Edson and myself followed in a buggy, taking Dr. I. T. Wilson with us.

When we got to the house the patient was put under the influence of chloroform, and after trying taxis once more and failing, I cut down on the neck of the tumor and tried to reduce it without opening the sac; but failing, did so, when, as Dr. Robbins described in a preceding case, "a hatful" of intestines rolled out. There was little difficulty experienced in returning the bowels. The wound was closed with interrupted iron-wire sutures, and dressed with a dry compress and figure-of-eight bandage.

Dr. Edson requested me to take charge of the case, but as we were returning home, in crossing the street-car track, the springs of our buggy broke and I received an injury that forced me to keep my bed for some weeks, and Dr. Wilson took the case.

He reports that from the time of the operation, the man never complained of pain, nor had he tympanites, but spit up large quantities of muco-purulent matter, becoming weaker all the time, until the third day, being unable to raise the sputa, he died, literally drowned in his own secretions. The wound was not inflamed, and looked like it would have healed by first intention. There was so little pain or abdominal trouble after the operation, that the Doctor did not give a single dose of morphine. He had been suffering with chronic bronchitis, from which he expected to die, and in anticipation of death had made his will some months before. He had never been troubled with hernia but once before; some two years previously, it appeared for the first time and became strangulated. Dr. Edson readily reduced it by taxis and applied a truss, which he wore for some months, when he laid it aside, believing himself cured, until the afternoon of the day he was operated upon.

CASE IV.—March 2, 1875, Joseph Van Blair called me to see his son Harry, an infant two weeks old, that had been suffering great pain, with vomiting, for several hours. Examining the child I found a tumor somewhat larger than a hen-egg in the right inguinal region, consisting of two lobes, the one above the other. This tumor had existed from birth, with the exception



of the lower lobe, which had not been noticed until after he began to suffer pain and to vomit. Careful manipulation failed to reduce the tumor. The upper portion appeared to me to be a congenital encysted hydrocele, and the lower an enterocele. To be sure, I ran an exploring needle into what I thought was the hydrocele, when out trickled a few drops of clear serum. I then enlarged the opening by running the sharp three-cornered point of a probe down the groove of the needle as a director; after the end of the probe was well into the tumor, I separated the outer ends of it and the needle, which procedure stretched the hole open and allowed the remainder of the serum to escape. As soon as the hydrocele was empty the bowel was easily returned within the abdomen; a truss was applied, and no further trouble experienced.

CASE V.—April 30, 1875, I was called to Mrs. Halstead, a widow, aged about seventy years. She had been troubled for some years with a left femoral hernia that would descend at times and cause pain, which would be relieved by returning the bowel. It seldom came down; had not done so over a dozen times; had never been strangulated but once before, when it was easily reduced by taxis. She was suffering great pain at the umbilicus with such tenesmus that she declared it unbearable. There was no vomiting. This was the only case of strangulation without vomiting I ever saw. Trying taxis and failing, gave half a gr. sulph. morph. hypodermically, and ordered hot fomentations applied over the hernia, which was about the size of a walnut. In an hour I returned and found the symptoms unrelieved; tried taxis again, and again failed. I now decided to put her under the influence of ether, try taxis again, and if unsuccessful, to operate immediately; Drs. William Zimmermann, Joseph Robbins, W. C. Pipino and R. W. McMahan kindly assisting me. Dr. Pipino gave the ether. Trying the taxis and again failing, I cut down on the tumor until I came to the sac, which was very deeply congested and dark. The sac was seized with a pair of dressing-forceps and drawn down and inwardly as far as possible, and at the same time the neck of the sac was manipulated, when the bowel slipped easily back. The sac was then returned. The wound was dressed with a dry

compress and figure-of-eight bandage. The relief was immediate. Quietness was enjoined and one-third gr. morph. ordered every hour pro re nata.

May 1.—Having had some pain at the wound during the night, had taken two morphine powders, which gave relief and sound sleep. She felt so much refreshed this morning that, notwithstanding her orders to keep quiet, she got up out of bed and leaned out of the window for over half an hour, looking at a circus-parade passing through the streets. It is needless to give the particulars of the daily history of this case. She got rapidly well, the wound healing by first intention. The sutures were taken out and the bowels were moved with an enema the sixth day. In two weeks she was fitted with a truss that sometimes she wore and sometimes she did not, as her own "sweet will" dictated.

The hernia since the operation comes down much more easily, but there has never been a symptom of strangulation since, which invariably occurred at each descent before, and it is easily kept up by the truss.

CASE VI.—Monday, April 10, 1876, I was requested by my able friend, Dr. Francis Drude, to go with him to see Mrs. Hoffman, a German lady, somewhat past middle age, who had been suffering with a strangulated left femoral hernia since the Friday night preceding. When the hernia became strangulated she was at Camp Point, Illinois, about twenty-five miles distant from Quincy. A physician was sent for, who tried to reduce the hernia, with and without anæsthesia, by taxis, but failing, told her, as she says, that he feared herniotomy would be necessary; that every patient that had been operated on in that neighborhood had died, and that without operation she would surely die, and the best course for her to pursue would be to go on the cars, on a cot, to Quincy and get some surgeon to operate. This advice she followed, arriving here Saturday, the 8th, in the evening, and sent for Dr. Drude, who tried the taxis, and failing, ordered opiates and hot fomentations.

Sunday (9th), she was resting somewhat easier, vomiting but seldom, with much less pain. Sensibility evidently dulled by the opiates.

Monday (10th), I accompanied the Doctor, and found the skin over the hernia considerably reddened; pulse 110; temperature 100°; considerable umbilical pain; some nausea, but no vomiting. She was placed under the influence of ether, and efforts made to reduce the hernia; failing in which I advised an immediate operation, fearing paralysis of the constricted bowel from so long a constriction, and possibly inflammatory adhesions within the abdomen that might produce death subsequent to an operation that would relieve the original trouble, to which Dr. Drude objected, because there had been no vomiting that morning. She not being my patient, we split the difference of our amicable disagreement by leaving instructions that should vomiting ensue we were to be immediately sent for; in the meantime the fomentations and opiates were to be continued *pro re nata*.

At 10 A. M., April 11, we called again, and found that stercoraceous vomiting had set in about two hours before our arrival. The pain had greatly increased. Temperature, 102°; pulse, 115. No alvine evacuations, although she had had large injections given every few hours from the time of the strangulation.

The Doctor now agreed that an operation was imperatively necessary. The patient was put under the influence of ether, and I cut down on the tumor. Finding the stricture outside the sac, it was relieved by incision. The sac was almost black. I felt that it was very unsafe to return tissue so nearly gangrenous to the abdominal cavity, yet, although I consider the danger of opening the abdominal cavity greatly overrated, if properly treated, I did not like to open the sack; I therefore slipped the retained bowel back, and after it the sac, just within the abdomen, intending to cut down upon it again from above Poupart's ligament if any trouble showed subsequent to the operation. The wound was closed with iron-wire sutures, a dry compress applied and retained by a figure-of-eight bandage. Half a gr. morph. was given hypodermically as soon as she recovered from the influence of the ether, and the same amount ordered *per orem* as often as necessary to control pain or restlessness.

April 12, A. M., patient had rested well; Dr. Drude had seen

her the previous afternoon. Pulse 100; temperature  $99\frac{1}{2}^{\circ}$ . Had drunk a little beef tea. The wound feeling well was not disturbed.

April 13, A. M., still better. Getting hungry, but had been allowed nothing but soup and milk. Temperature  $99^{\circ}$ ; pulse 85; tongue clean. Wound suppurating some. Lower stitch cut to allow free drainage. My visits now ceased, Dr. Drude continuing to attend her. He states that the wound continued to discharge small quantities of pus for some ten days, when it healed up nicely. A week later a truss was applied and well borne.

The above cases constitute all that I have been unable to relieve by the taxis. Of them it will be seen that four were operated upon within a few hours after the strangulation. From which number Case IV. might possibly be deducted, as the operation of tapping the hydrocele, to permit the return of the hernia, can hardly be considered as approximating a herniotomy, yet it was not, necessarily, much less dangerous than a cutting operation where the opening in the skin is small and the sac is unopened. One (Case III.) died of chronic bronchitis, the cuts in that and the remaining cases healing by first intention.

In two of the cases the strangulation had existed for three days or longer before they were operated upon. In each, the bowel approached gangrene, and could not have been left much longer without this resulting. In both there was suppuration in the cuts, and slower recovery than in the cases operated on early.

It may not be amiss to consider here the proportion of deaths following herniotomy; and I take the liberty to introduce the testimony of Prof. Frank H. Hamilton, System of Surgery, p. 724: "Mr. Hey states that he lost three patients out of five upon whom he operated. It is difficult to find reliable statistics upon this subject to-day—I mean such as the records of an hospital alone can furnish; but it is my impression that the mortality remains about the same as when Mr. Hey wrote, now nearly one hundred years ago."

After having given the subject much study, and in the light



of my limited experience, I believe that taxis with and without anæsthesia should be tried, but neither for too long a time nor too forcibly. I have seen the taxis persisted in for more than half an hour, the surgeon using all the time such an amount of force that it was almost a miracle the patient escaped rupture of the bowel or peritonitis. Such is the fear of some practitioners of wounding the skin—for in the great majority of cases if operated on early the sac need not be opened—that they rashly produce irreparable damage by their manipulations, but rest apparently satisfied so the damage is unseen, very few autopsies being made in private practice. Failing in the taxis, morphia should be given hypodermically, and ice with a fold of flannel between it and the skin, or large hot poultices applied for a reasonable length of time—say from one to three hours, according to the urgency of the case. Failing again, or the pain being very great, the operation should be proceeded with at once, not waiting until the constriction becomes so great from swelling as to destroy the vitality of the contained bowel.

Of course, when the operation is resorted to thus early, opening the sac is to be avoided if possible, and in most cases it can be. Even if the stricture is in the neck of the sac it may frequently be relieved by stretching, which sometimes can be easily accomplished by inserting the blunt point of an aneurism needle under and within the stricture, being careful to start far enough from the stricture to allow the wall of the sac to fold upon itself, and pulling upon it gently.

Prof. Frank H. Hamilton lays down rules that are about as short and perfect as can be attained for herniotomy, *System of Surgery*, p. 724: "Herniotomy, considered as the final resort in all cases of strangulated hernia, can only be discussed in connection with each particular form of the accident. There are, however, a few maxims relating to this operation which have universal application; one of which merits especial prominence; namely, that more lives have been lost by delay than by too early resort to the knife. Nevertheless, it is not quite certain but that this maxim would have been reversed, if delay did not usually imply violent and prolonged taxis. Recent herniæ suffer more acute strangulation and admit of less delay than old.

Strangulated intestine demands more speedy relief than strangulated omentum."

I have not regretted once having operated early, but I have regretted not having operated soon enough.

The night of June, 23, 1870, I was called to see Louis Berlin, a German, aged about sixty, who was suffering with cholera-morbus, which I relieved, but was sent for again the next morning, he having been seized very suddenly—after resting well from the time I saw him in the night—with great pain and vomiting. The pain was at the umbilicus, and in a large irreducible hernia of the right side that had existed for years. The hernial tumor commenced swelling about the time the vomiting came on, and by the time I saw him (10 A. M.) it was very large. I tried to relieve the strangulation by taxis, with and without chloroform, but failing, requested that another physician should meet me in the afternoon. 3 P. M., a physician having several years' experience and extensive reading, met me, when the taxis was tried, as before, but was again a failure. I now insisted on herniotomy, to which the counsel objected, telling the family that he thought "hypodermic injection of morphia with a little atropia, and a continuance of the poultices, would likely effect a reduction by morning (which would be time enough to think of operating any way), and that I was very young and fond of operating, which accounted to him for my fear of the result if we waited." Thereupon I requested the Doctor to take charge of the case, telling the family that the man would surely die if we waited.

The next morning, June 25th, the physician asked me to accompany him to see the patient; on the road he entertained me with a lengthy and learned discourse upon conservative surgery, which deference to his age made me listen quietly to.

About one minute after we reached the house the patient died.

As we returned, the Doctor rallied me about looking sad, to which I replied that I had just witnessed a *sad* scene, and one that was the usual *finale* to the majority of the cases of *so-called* conservative surgery; that there were but two ways to do any thing, the one right and the other the wrong way; and the term conservative too often covered ignorance or cowardice, either of which was an injury to true surgery.

ART. II.—*Remarkable Case of Alcoholic Coma.* By FREDERICK D. LENTE, M. D., Cold Spring, N. Y., now spending Winter in Florida.

Thomas Murphy, an Irishman in the employ of the Hudson River Railroad Company, aged forty-two, a stout, healthy man, had been feeling rather under the weather and "bilious," and thought a good vomiting would relieve him. He had, it seems, been in the habit of effecting this by taking repeated drinks of beer and other liquors. He commenced this operation in the afternoon of May 22d. He took, according to the statements of those about him, a half gallon of ale, one glass after another in quick succession. I afterwards learned from him that he then went over to a gin-shop of low character and drank one glass of apple-whisky and four of gin, each drink being at least half a tumblerful. He did not vomit, but fell asleep at half past five o'clock P. M., and I was called to him at a quarter to 10. He was in a state of profound coma, breathing stertorously; pulse 132 and very feeble and soft; temperature in axilla, carefully taken twice, 101° F.; body warm throughout, although he had been laid on the damp ground in a shed to avoid the heat of the house, and with no covering; pupils rather contracted and not responsive to light; mouth partly open; tongue red and quite dry; head not hotter than the rest of the body; face stained by a dark fluid which had flowed from the nostrils and dried.

I had him removed to a large room and laid on a bed on the floor, applied ice over the head, sent for the most powerful preparation of ammonia (Granville's lotion) which the apothecary could furnish, and a powerful electro-magnetic battery. Pinching, shaking, sticking pins deeply into him had produced no response of any kind. The lotion was applied freely over the front of chest and confined under the shirts. This same lotion had thus roused a patient almost moribund from opium-poisoning when everything else, except the battery, had failed, but it had not the slightest effect in this case. The most powerful current of the battery, with one wet electrode over the side of the neck (pneumogastric and phrenic nerves), the other passed over the stomach and attachments of the diaphragm, although

producing powerful contractions of the muscles, failed to rouse the patient in the least degree or to produce an alteration in the pupils, but *the pulse became decidedly stronger*. One electrode was now placed over the nape of the neck, and, after a trial over the diaphragm, was applied over the face, but beyond causing energetic grimaces and sudden closure of the jaw as the sponge was moved over the different muscles, and affording some entertainment to the crowd of bystanders, it failed as before. Remembering now the excessive sensitiveness of the supra and infra-orbital nerves to induced electricity, patients seldom being able to bear more than the mildest current of the mildest battery, I placed the sponge suddenly over these parts, and for the first time produced slight alteration of the pupils and a very slight voluntary motion and some indication of suffering. Keeping this up by constantly interrupted applications, first to one nerve then to another, the pupils soon became considerably dilated and quite responsive to the stimulus of light. The lotion was now tried again more freely, but only the slightest blush of redness could be obtained, and only the feeblest indication of feeling, and soon both these disappeared, and the application was abandoned. A prolonged but interrupted irritation of the orbital nerves caused the patient finally to put his hands to his face to shield it, to make efforts at biting when his lips were touched, and to mutter indistinctly, finally to turn on his side, and once or twice to feebly raise his eyelids. A pin at this time stuck in his hand was not felt at all, but stuck into the supra-orbital region produced a motion indicating pain. His pulse during all this time diminished gradually in frequency and became stronger, coming down in an hour to 105. His respiration was also easier, stertor disappearing. At the end of an hour and a half, by no effort could we arouse him to any further consciousness, and as his pulse was quite good, I left him for Nature to finish the cure.

In the morning, May 23d, at 10 o'clock, I found him sitting up and feeling about as well as usual, and not the least sore, either from the lotion or the electricity. He had shown no sign of consciousness until 4 A. M., when he roused up and asked for water. He stated that he had had an attack of ague



three weeks before and had taken a solution of quinine; and it is probable that he had a malarious attack yesterday, causing the unpleasant sensations which, as he alleged, induced him to resort to his extraordinary medication. This may serve to explain the elevation of temperature instead of the depression, which one would expect to find after such enormous doses of alcohol.

*May 24th.*—Suspicious of malaria confirmed. He had a sharp attack a few hours after my visit. Possibly a part of the congestion attending his attack may have been due to this cause.

In the January 2, 1875, number of the "London Lancet" is a case reported very similar to this, which I condense: St. George's Hospital—"Case of Acute Alcoholic Poisoning," under the care of Dr. Wadham. The patient, a man aged twenty-one, drank an enormous draught of a mixture of brandy, whisky, and rum, which had been spilled into the gutter. About five minutes after he showed signs of intoxication. He was soon comatose; was brought to the hospital at 2 P. M. On admission, perfectly comatose, face somewhat bloated and livid, and frothy mucus was issuing from his mouth and nostrils; his skin was cold and clammy; his pulse fluttering; the breathing short and stertorous, and pupils unequal and inactive. By means of the stomach-pump, sufficient spirit to make more than a gallon of strong brandy and water was withdrawn. Respiration having nearly ceased, he was galvanized in the course of the phrenics and heat freely applied to surface. By these means his breathing became better, his pulse fuller, and the congestion of the face ceased; but *whenever the galvanism was omitted for a few minutes, the respiration stopped* (italics mine). This galvanism was continued until 3:10 P. M. After which he continued breathing of his own accord, and some urine drawn off smelled strongly of brandy and contained a considerable amount of albumen. At 5:30 P. M. respiration again ceased, but recommenced under the influence of galvanism. At 5:30 A. M. of the 27th, the day after his admission, he had turned himself in bed and showed some slight consciousness when attempts were made to arouse him. His pupils acted slightly.

At 7 A. M. he died somewhat suddenly, exactly nineteen hours after drinking the spirit. The autopsy revealed merely slight congestion of the membranes of the *brain*; the ventricles perfectly dry, and the substance of the brain natural in appearance; stomach only slightly congested at its cardiac extremity; lungs intensely congested, and bronchial tubes congested and filled with sanious fluid.

In my case the stomach-pump, although at hand, was not used, because five hours had elapsed from the ingestion of most of the liquor. However, it would perhaps have been well to have resorted to it, as three hours had elapsed in the St. George's Hospital case before the evacuation of the stomach, and a large quantity was still unabsorbed. The more profound coma induced in these cases by alcohol than by very large and even fatal doses of opium in other cases, as shown by the feeble response to electricity and other irritants, is worthy of note. In apoplexy, with which my own case might, under certain circumstances, have been confounded, although we can not rouse the patient to any signs of consciousness, we may usually induce reflex action by irritating certain points on the surface; and, on the other hand, in opium-poisoning, even in the most profound coma, though we may not induce reflex action, we can almost always cause a feeble, though very transitory, response, in a voluntary way, to a sudden and powerful irritant. In both these cases the utter impossibility of rousing either reflex action or consciousness by the most powerful and efficient means for so long a period is quite remarkable. In the hospital case the pupils were *unequal* and inactive. In my case they were contracted, but not to such an extent as to indicate opium-poisoning. This is also unusual in alcohol-poisoning. In the autopsy of the hospital case the absence of lesions in the stomach, and, indeed, in all the organs except the lungs, is worthy of note.

In a recent discussion before the New York Neurological Society, the writer contended, in opposition to the experience and opinions of other speakers, that in poisonous or overwhelming doses, alcohol did not produce its pathological effects on, or leave its traces in, the stomach or the brain, or even in the lungs,

except incidentally, like any other poison, or cause of sudden death; but that they are due to *shock* in a great measure, especially in those sudden cases with which we sometimes meet, one of which I instanced, where death almost immediately follows the ingestion of an unusually large amount of diluted alcohol, perhaps charged with fusel oil.

The most important fact of practical value in the history of these cases is the remarkable efficacy of both the primary and induced currents in their treatment in rousing into action the respiratory muscles, which is understood and admitted by every one; and the general *tonic* effect of both currents, which is *not* generally admitted, as manifested by a regular increase in the force and diminution of the frequency of the heart's action, though applied to indifferent parts of the body (one electrode, however, being always kept over the spine), and not to such nerves as would directly influence the heart, and not even, for some time, rousing the patient to the slightest display of consciousness. In a paper on "opium poisoning," read before the Medical Library and Journal Association of New York, by Andrew H. Smith, April 23, 1875, he says: "The weakest current should be used which will provoke muscular contraction." But in my case the most powerful muscular contractions were not followed by any response, and only the very strongest current to the supra-orbital region, one far beyond what was necessary for the induction of muscular contraction, was adequate to the production of sufficient pain to cause any voluntary, though unconscious, effort on the part of the patient.

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ART. III. — *Hypodermic Injections of Quinine in Malignant Malarial Fever.* By JUDSON DAVIE, M. D., of Spring Hill, Barbour County, Ala.

It is not my intention in this paper to describe and discuss at length malignant malarial fever, nor enter in detail upon its treatment. I simply wish to impress upon the minds of those who are not familiar with the disease its gravity, and the importance of prompt, decisive measures of treatment.

The doubtful manner in which the hypodermic mode of giving quinine is spoken of by one or two authors, whose works on practice are in my possession, induces me to believe that it is not considered of established primary importance, and that it is not used to an extent commensurate with its value.

However, my library does not furnish a more recent reliable work on practice than Dr. Austin Flint's third edition. In this work, page 869, he says: "The administration of quinia, by means of hypodermic injections, *promises\** to be a valuable improvement in treating certain cases of intermittent fever, more especially of the pernicious form. This method of administration has, as yet, *not been pursued to a great extent, and facts are wanting to show how far it should supersede the ordinary modes.\** It has been found effective in cases of pernicious intermittent characterized by coma and inability to swallow. It may be resorted to when, from irritability of the stomach, the remedy will not be retained if given by the mouth. Facts appear to show that for the requisite effect, a much smaller quantity by the hypodermic method suffices than when the remedy is given by the mouth or rectum."

Thus it will be seen that Dr. Flint does not speak with that degree of assurance and confidence that carries conviction with it. There seems to be a missing link in the chain of evidence bearing upon the point, which must be supplied in order to establish for it a solid basis. I propose to help furnish that missing link, even at this late day, by placing upon record my experience in regard to the matter.

But before one can appreciate an escape from a perilous situation, he must be cognizant of his danger. This being the case, I will speak a few moments concerning the gravity of the disease, by way also of impressing upon the minds of those who are not in the habit of treating such cases, the importance of the measure advocated. Those who are familiar with the disease need no reminder.

In this section of country, Southeastern Alabama, we rarely meet with any disorder, especially through the summer

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\* I have italicised his words.

and fall months, uncomplicated to some extent with malarial poisoning. We have malarial fever, from the mildest intermittent to the most aggravated forms of the disease; and malignant malarial fever, or pernicious fever, congestive fever, etc., as it is often termed, is a fearful malady.

I have seen the algid variety of some writers, denoted by remarkably cold extremities; the whole surface bathed in a profuse, clammy, cold perspiration; the pulse small, and perhaps so feeble as to be scarcely perceptible; fingers shriveled; the patient complaining of great internal heat. I say I have seen this state of affairs last for hours and hours in the *first* paroxysm, and the patient finally die in spite of all efforts to the contrary.

I saw not long since a child three years old die in the first paroxysm from "active congestion of the brain," with marked "congestion" also of the stomach and bowels—vomiting the slightest substance, and discharges from the bowels every few minutes.

Dr. Flint does not overdraw the picture on pages 866 and 867 when he says: "In some seasons *the fatality from the disease* (pernicious intermittent fever) *is very great,\** and it constitutes *one of the most formidable* of the maladies which the physician has to encounter. In a certain proportion of cases the pernicious character of the disease is manifested in the *first* paroxysm, and *death* may take place in that paroxysm."

However, it has been my experience that the majority of cases that prove fatal succumb in the second and third paroxysms. And it has further been my experience, that it is almost impossible to avert a "pernicious paroxysm" entirely at the first effort, no matter what has been the treatment; or rather if the depression is avoided there will be some fever, coming on near the time for the paroxysm. Cases that terminate favorably are, as a rule, *greatly modified* with the first effort, and successfully met at the second and more rarely at the third.

There are cases whose vital forces are so sapped and overwhelmed with the poison that it is beyond the power of medi-

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\* The italics are mine.

quine to save them. I have seen such cases go into a paroxysm and die with their ears deafened and their sight dimmed with quinine.

And this is the great beauty and advantage of the treatment, no matter how impossible it is for the patient to swallow, nor what the condition of his stomach is, there is no alternative when the quinine is put under the skin but for it to be absorbed and pass into the circulation.

It is an old-established fact, that malarial poisoning is the cause of the malady, and that quinine is the one main antidote; this being the case, cinchonism must be induced in conjunction with other appropriate treatment, or your case will be irretrievably lost.

Of course, then, it is our solemn duty to adopt the surest mode of establishing such a state of affairs. It is not necessary for one paroxysm to subside before commencing the administration of quinine to avoid another. The cause being malaria, and quinine being our most reliable antidote, what sense is there in withholding it? The danger in delaying its administration is much greater than the ill effects of giving it before the subsidence of fever, or any other supposed contra-indication. It is also mere nonsense to wait for "preparatory" measures of treatment to take effect, as advocated by some.

I met not long since in consultation a physician whose head was gray with age, who objected to giving quinine in a case of malarial fever that was inclined to assume a malignant form until a dose of calomel, given some hours before, was passed off. His reason was, that it had been his experience that it frequently produced ptyalism. My experience does not agree with his; under similar circumstances I *never* hesitate to give it. We finally decided to give the quinine; the patient recovered, and was not salivated. But suppose he had been, is not ptyalism much less dangerous to life than a malignant paroxysm? Clinical records are always more convincing than mere statements; consequently I will give two or three cases as examples to illustrate the measure advocated.

CASE I.—In the fall of 1871, after riding several miles in the morning, I returned home feeling badly—pain in head, back

and limbs; soon had a marked chilly sensation, followed by fever, which lasted several hours; tongue furred and bowels constipated; took a dose of cathartic pills; used cold applications to head during the hot stage, and drank freely of cold drinks. Walked about late in the evening, and by bedtime pills acted several times. At midnight began taking quinine in 5-grain doses at intervals of three hours. By 9 A. M. had taken twenty grains, but without appreciable effect, except a very sick stomach. By 10 A. M. a well-marked paroxysm was approaching, which soon became very severe; my limbs became cold in spite of mustard and blankets and bottles of hot water; my back seemed as if it was breaking to pieces; my head ached violently, and my mind soon became clouded; my stomach at length gave way, and I vomited repeatedly everything introduced; pulse small and fast—in short, my condition soon became critical. Between 12 and 1 P. M. Dr. M. S. Davie arrived. Inserted  $\frac{1}{2}$  gr. morphine in a solution of quinine containing two grs. hypodermically. Brandy was rejected repeatedly; hot applications continued, with mustard to stomach and spine, and cold applications to head. In half an hour my more intense sufferings began to subside and the power of resistance to assert itself. By 3 P. M. reaction was thoroughly established and began to be violent. Another insertion of quinine containing one grain hypodermically; soon after my ears began to respond for the first time. Cold applications to head continued, with sponging the face, hands and arms with cold water as the fever became intense. Quinine kept up at intervals of three hours. About night ice, which had been sent for, arrived, and was freely taken; after which the stomach was more quiet, and at bedtime a dose of calomel was retained, which acted the next morning early; and at this time there was also a marked remission. Iced milk punch was now freely allowed. Doses of quinine hypodermically increased, as the time for the paroxysm approached, until partial deafness was established. There was no marked paroxysm, but some fever during the remainder of the day. Quinine lessened in dose and lengthened in turn, but not entirely abandoned by the hypodermic method until after the time for the fourth paroxysm; then a dose of several grains

by the stomach every morning until well. The milk punch was continued until convalescence was thoroughly established.

*Remarks.*—Who can doubt what would have been the result but for the *hypodermic* use of quinine? Was there any reasonable hope that the third paroxysm, which would have been, according to the history of the disease, more violent than the second—I say was there any reasonable hope that the third paroxysm would have been avoided when a fair trial failed to prevent the second?

On account of the growing length of this paper, I will give only an abridged statement of one or two more cases.

CASE II. is that of a little girl four years old. She was taken with intermittent fever, and was treated for a couple of days by her parents; the treatment was sound and practical; an effort was made to “keep off the chill”; but the stomach was irritable, and only an occasional dose was retained, and the chill returned with considerable force; an effort was then made to keep it off on the next day by giving quinine by enema; the effort was a failure, and a *very dangerous* paroxysm was the result; at which time they sought medical aid. Saw her in the midst of a doubtful struggle; after a hard fight, however, she rallied. I stayed with her from then until after the time for her next paroxysm, giving quinine hypodermically every three hours, in conjunction with such other treatment as the case required. Cinchonism was thoroughly established, and no marked paroxysm ensued on the following day, but some fever, which was successfully averted in due time. She was left very much prostrated, and was a good while getting well, requiring tonics, etc.

CASE III.—A young lady; saw her as the first paroxysm of a malignant attack was passing off. Commenced using quinine hypodermically, and continued it until all danger was passed. This case was a complicated one; the menstrual discharge became arrested, giving rise to a train of nervous phenomena and a good deal of suffering; morphine occasionally was used, giving it in the same solution with quinine. It is very frequently the case that an opiate of some kind is necessary, and I prefer to



use morphine, as in this instance; the two act admirably well together, each seeming to enhance the action of the other.

I could mention numbers of other cases treated in the same manner, but these I deem sufficient to illustrate the value of this mode of giving quinine regardless of age, sex, and other contingencies. I claim nothing new or original; I simply advocate a measure, the importance of which, I am fearful, is not generally appreciated and practiced to the extent it deserves to be.

I dislike to be tedious, but a few words as regards details may not be inappropriate. The formula used in preparing the solution is nearly the same as one recommended by Leorust, of Bremen, in Dr. Flint's work, though original among physicians here. Water, one ounce; sulphuric acid, eleven drops; quinine, thirty-three grains. Mix the acid and water, and gradually add the quinine, stirring with a glass rod; if the solution is not clear it may require one, possibly two drops more of the acid. Filter through paper, and it is ready for use. Ten *drops* of this mixture is equivalent to fifteen *minims*, which contains one grain of quinine. And it has been my experience that one grain hypodermically is equivalent to three or four by the mouth.

As regards the best place for insertion, I have found the region of the collar bones to be the most preferable. Any spot will do that is at all suitable for hypodermic injections, but when it is inserted where the muscles are in constant use just beneath the skin and fascia, it will be apt to occasion soreness and swelling. Abscesses are rare when the solution is kept free from particles and sediment. If care is not taken the instrument used may be spoiled by the acid acting on the piston and other parts; to avoid this it should be washed after using, first in clear water, then in a solution of soda (a teaspoonful in a glass of water), then in clear water again. Ether perhaps will answer the same purpose, but it is not always convenient.

There is considerable pain on forcing out the solution, for the acid is irritating to the tissues, and there are frequently hard, indurated spots where the fluid is forced out, lasting a few weeks or even months, but they always gradually disappear.

I do not claim that this method is free from objections, but the benefit in cases of emergency is so far in excess of the ordinary modes that the objections sink into insignificance.

Thus I have placed upon record my experience in regard to a matter that is of comparatively recent origin, endeavoring to record only facts, hoping for no higher reward than that some poor mortal may be snatched from the jaws of death, and add another to the list of living monuments in support of the measure advocated.

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## ECLECTIC DEPARTMENT.

“Carpere et colligere.”

ARTICLE I. — *Remarks on Precision in the Use of Topical Remedies.* By S. MESSENGER BRADLEY, F. R. C. S., Surgeon to the Manchester Royal Infirmary, and Lecturer on Practical Surgery at Owens College. [Delivered in the Manchester Royal Infirmary.]

In the beginning of these remarks Mr. Bradley said: I gladly comply with the request made to me that I should deliver lectures on the application of topical remedies, as a good deal of haziness pervades this subject, and as it is important that a student should be able to give a reason for the faith that is in him, as to why a lotion in certain cases is preferable to an ointment; why cold is indicated in one case, heat in another; when electricity is likely to be of service, and in what form; why motion is likely to prove beneficial at one time, rest at another; and so forth. And in fulfilling this task I will, as far as possible, try to show how remedies may be used with precision, and avoid allusion to agents of merely fanciful value; else might I speak of fevers cured by the clinical thermometer being placed in the mouth; or of the *Sanguinaria Canadensis*, at one time hailed as a panacea for cancer; or of the hypophosphites, vaunted to cleanse us of our island's scourge, consumption. New remedies not unfrequently suffer from over-praise; and

by-and-by we see the drug which was absurdly vaunted as a cure-all fall into an equally undeserved desuetude.

In these lectures, however, I shall only speak of remedies whose action is in a great measure known, and which may consequently be employed with some certainty as to the result, and shall treat in turn of the local use of caustics, cold, heat, lotions, ointments, pressure, electricity, rest, and motion. And first let me speak of caustics.

The caustic agents employed in surgery may be divided into alkaline, acid, and *special* caustics, such as chlorides of zinc and bromine. Nitrate of silver, which, *par excellence*, is called "caustic," scarcely merits the name, as it only enters into superficial combination with the fluids of the tissues, forming an albuminate of silver, the liberated acid acting, as far as it goes, like the other acid caustics which have shortly to be considered.

The *alkaline* group, sufficiently represented by caustic potash, acts very vigorously, converting the destroyed tissues into a dark and glutinous pulp. They operate by absorbing water and uniting with the oxygen or acid of the tissues, all the time dissolving the nitrogenous substances, until they finally come to rest, when a condition of equilibrium or neutrality is attained. We consequently select alkaline caustics when we desire a deep and searching action, and therefore they are suitable for the removal of warts, cheloid and other similar flat growths, or for the formation of sloughs, as in carbuncle, etc. United with lime, caustic potash becomes more manageable, and is occasionally very serviceable in destroying a gland, infiltrated with the specific virus of syphilis, when, as sometimes happens, we can not get a suppurating bubo to heal. With the same agent I have succeeded in completely rubbing away a flat epitheliomatous growth on a man's cheek, which had become evolved from a preëxisting cheloid formation. We should always have numerous bits of blotting-paper at hand when we employ caustic potash and lime, to wipe away the black treacle-like slough which is formed, and to see that we do not penetrate too deeply. At the end of the sitting, vinegar and water should be sponged over the part to arrest further action. Largely diluted with water, the caustic alkalies are useful in checking cutaneous irri-

tation, and in the form of lotions and injections are usefully employed in the treatment of eczema and leucorrhœa, in both of which diseases the abnormal secretion is acid.

The mineral *acids* in a concentrated form are all caustic, but sulphuric and nitric acids are those most frequently selected. They penetrate less deeply and widely than the preceding group, and are therefore especially indicated where a rapid and superficial action is needed. They act by yielding up their oxygen to the tissues, which in its nascent condition burns the carbon and finally comes to rest as a neutral salt. The acid caustics are indicated in the treatment of such sores as soft chancres, or indeed whenever we wish to destroy the surface of a sore and inaugurate a fresh mode of action. In cases such as these, when we wish to limit the caustic action very accurately, the acid should be applied by means of a glass capillary tube, and after its operation is over, iodoform should be dusted over the sore. This constitutes the best treatment for the non-infecting form of syphilitic sore. In cases of sloughing ulcers or sloughing stumps, fuming nitric acid, freely applied under chloroform, answers better than anything else in hastening the detachment of the slough and inducing healthy action. The acid caustics may be used locally in cases of cutaneous and veno-cutaneous nævus—in the former by tattooing, in the latter variety by subcutaneous injection with a fine syringe—but I have found carbolic acid a decidedly better agent. Diluted in the proportion of two to eight ounces to a bath, the acids act powerfully upon the cutaneous capillaries, and so are energetic in bracing up and stimulating a torpid skin. For the same reason they are useful in checking sweating; sponging with Rimmel's vinegar and water being a convenient and pleasant mode of prescribing acid for this purpose. By virtue, too, of this principle of astringency, the acids, when diluted, are useful stimulants to indolent ulcers, or for arresting the bleeding from leech-bites, or for hardening the skin of tender feet—though for the latter purpose salt and water is a better agent; and, indeed, I should recommend those of you who contemplate an autumn walking tour to prepare for the tramp by soaking your feet in salt and water twenty minutes every day for a week before you start.

*Chloride of zinc*, introduced by Campbell de Morgan, is an efficient and valuable caustic. It acts, at the same time, as a disinfectant and deodorizer, and is especially indicated when we wish to destroy cell-growth beyond the region which the knife can reach; hence its value after ablation of the breast for cancer, for it finds out and destroys numerous cells which have escaped the scalpel; and as it arrests putrefaction for several days, it is a capital plan to inject a strong solution of chloride of zinc into deep sinuses, with or without bone at the bottom; for by this means we often succeed in destroying the living pyogenic membrane, and so put a stop to cell-proliferation. Caution is needed in employing this agent in operations about the mouth and throat, as, when swallowed, it acts as an irritant poison. In the proportion of from one to five grains of chloride of zinc to the ounce of water, we have a powerful astringent, and therefore a valuable remedy for gonorrhœa and allied disorders.

*Bromine* is a remarkable and powerful caustic; its action is not thoroughly understood, but it may be conjectured that it acts much in the same way as nascent oxygen, burning the tissues with which it comes in contact until it enters into chemical combination with them, and so comes to rest. Its action is long-continued and very painful, so that it is well to administer an anodyne prior to making any extensive application of the drug. Bromine should be mixed with spirits of wine, in the proportion of one part bromine to three parts spirits of wine. The admixture should be made slowly, and in the open air, as the fumes are very suffocating. It is principally used for destroying young cells, especially cancer-cells, when removal of the growth by the knife is necessarily partial or impossible. Applied by means of a glass brush to the os uteri in cases of uterine carcinoma, or to the tongue in the same disease, it is certainly of service in checking for a time the progress of the malady.

*Iodine* is an agent belonging to the same group, and possessing similar, but less powerful, caustic properties. It is, however, an excellent disinfectant, and, mixed in various proportions with water, is a valuable agent in cases of obstinate sinuses,

sloughing sores, and freely suppurating cysts, which resist other treatment. I lately employed iodine and boracic acid in a series of cases in which there was sloughing, such as crushed and lacerated hands, and found both answered very well; but while the parts healed quite as quickly and inodorously with the boracic acid as with the iodine, there was far less pain with the former than with the latter remedy, and no weeping attendants, as invariably happened when the dressings were made with iodine.

*Cold* may be employed in the form of ice, or ice poultices (made by mixing bits of ice with a linseed poultice), or evaporating lotions, or irrigation. Cold acts through the vaso-motor nerves upon the capillaries, constringing and even emptying them of blood, and this not merely in those capillaries immediately in contact, but owing to the dispersion of the nervous filaments, even at a considerable distance, and thus renders the advent of congestion and inflammation physically difficult or even impossible. It should be used with some caution, as, if its action be kept up too long, it may destroy the vitality of a part, as happened lately in a case of femoral hernia, when, after operating, I applied ice with a view to prevent peritonitis; this it achieved, but produced a considerable slough of the integuments, which was a long time in healing over. The value of cold is typically seen in cases of sprain and of violent wrenchings of a joint. For example, after breaking down adhesions in cases of fibrous ankylosis, I know nothing so certain to obviate the tendency to synovitis as the immediate and continuous application of ice to the roughly-handled joint. In the same way, thin bandages, wrung out in cold water, kept cold, and applied with a fair amount of pressure, constitute the best of all treatments in cases of recent sprains and contusions. Besides causing contraction of the capillaries, cold, still acting through the trophic nerves, produces muscular contraction, to which property is due its efficacy in causing contraction of the relaxed parturient uterus; while its former property gives it value as a hæmostatic in cases of oozing from a stump or other parts after operation.

Nor should I omit to mention the value of ice as a topical

remedy after operations in the region of the throat—e. g., after excision of the tongue, the first twenty-four hours is a period of peculiar peril, from the tendency to inflammatory infiltration and consequent suffocation. This risk is in a great degree removed by directing the patient to constantly suck small lumps of ice. And while referring to its value in throat cases, I may mention that it is often of signal service in cases of idiopathic tonsillitis.

*Heat* is employed in the form of the cauterity (actual and galvanic), and by poultices and fomentations. When we desire to combine a cutting with a cauterizing action we employ the galvanic cauterity; when its cauterizing properties alone are needed, the actual cauterity is selected; but there is no essential difference in the mode of action of the two. The use of the cauterity may be briefly stated to be to arrest bleeding and to act as a counter-irritant. As an example of its use in the first case, I may mention its employment in excision of the entire tongue, and shall not consider it out of place to briefly describe the operation. Removal of the tongue was until lately one of the most bloody and fatal of operations; but owing chiefly to the introduction of the galvanic *écraseur*, it may now be practiced with no loss of blood and with but small present risk to life. Nunneley simplified the old operation of Syme by substituting a cut through the floor of the mouth for the division of the inferior maxilla; and my colleague Mr. Whitehead further improved on Nunneley's plan by simply passing an armed needle through the mylo-hyoid region, and threading the tongue through the loop of wire conveyed through this aperture. Even the wound thus caused is, however, unnecessary, for by first dividing the tongue along the raphé from base to tip, by means of the galvanic wire, each half may readily be removed by a cut with the wire traveling at right angles to the first incision, and by this means the inconvenient charring of the soft parts of the floor of the mouth, through which the wire would pass in Mr. Whitehead's plan, is obviated. The actual cauterity is employed to stop bleeding in all cases when it is very difficult or impossible to apply ligatures, as after excision of the upper jaw, or after removal of piles, which are incomparably better

treated by the clamp and the actual cautery than by any other plan. The value of heat as a counter-irritant is especially well seen in cases of chronic synovitis and arthritis of a more general kind. In these cases it stimulates the lymphatics and the capillaries at a considerable distance, and so excites absorption of exuded material and causes disappearance of old inflammatory thickenings and bands of adhesions. Even in pulpy degeneration of joints, when all active symptoms have subsided, the free use of the actual cautery followed by absolute rest is sometimes crowned with complete success, and it should certainly be resorted to in all such cases before practicing excision.

*Poultices and fomentations* act beneficially by relaxing the capillary system, and so favor absorption; in this way they often prevent suppuration, though, if inflammatory action has proceeded beyond a certain point, they hasten the issue by this same power of relaxation. Hence, nothing is more rational than to apply poultices when an abscess is in process of formation, though their application should be at once discarded after evacuating the contained matter, and Lister's method of dressing commenced, or the plan more recently suggested by Mr. Callender. Poultices made of Iceland and other kinds of moss are sometimes recommended as possessing special properties of absorption, but I have not been able to determine whether they do in reality possess any advantage over those made of linseed-meal. The inestimable value of hot fomentations in relieving the pain of angeioleucitis following a dissection-wound must not be overlooked. No one who has suffered from such an accident will be likely to do so, nor will fail to urge their employment in similar cases, always insisting on the absolute necessity of their being, like a toper's toddy, hot and strong and frequently repeated.

*Lotions and Ointments.*—To a large extent it is a mere matter of taste whether an ointment or a lotion be selected. It may, however, be stated in general terms that where large surfaces of cuticle are destroyed, as in cases of burns and scalds, ointments are preferable, inasmuch as they prevent radiation, and so, in a great measure, preserve the necessary animal heat.

Ointments, again, are chosen sometimes simply because, owing



to the locality, it would be difficult to apply lotions—as, *e.g.*, in injuries or diseases about the face and the flexures of joints. When insoluble substances, too, are thought desirable as local applications, we are constrained to employ an ointment in which the drug is conveniently contained. Lotions, on the other hand, are cleaner and cooler, and generally more pleasant. They are of course very numerous—fashion, as variable in these matters as in a lady's dress, makes a drug popular for a time, to give way to some fresh rival; but, numerous as they are, they may be classed into astringent, stimulant, and sedative. Preëminent among the first group stands lead lotion, which, combined with spirits of wine or with opium, you see so extensively used in the wards of this hospital. Lead, when added to an albuminous fluid, throws down a precipitate, which is an albuminate of lead, and this substance it is which coats over the abraded surfaces, forming an impermeable envelope; at the same time, it constricts the capillaries. It is, indeed, this double action which renders lead such a valuable agent where there is any cutaneous inflammation to be subdued. Hence it is most useful in cases of erysipelatous mischief, or in checking inflammation consequent upon compound fractures, or in allaying the pain of synovial and other forms of articular inflammation. When a stimulant rather than a soothing action is sought, we resort to other agents, such as our red lotion, which is composed of one grain of sulphate of zinc and five minims of tincture of lavender to an ounce of water; or to the nitric acid lotion; or, when the specific action of mercury is needed, as in cases of syphilitic sores, to the black and yellow washes of the Pharmacopœia. The sedative group, again, are best represented by the lotions which contain opium or other anodynes, combined with various ingredients of an astringent or a stimulating nature, according to the necessities of the case. Their use is clearly indicated whenever pain is severe.

I pass on to shortly consider antiseptic dressings.

*Antiseptic dressings* were introduced into the practice of surgery from a belief in the germ origin of putrefaction. This theory maintains that putrefaction, which is in its turn the cause of septicæmia, pyæmia, etc., and therefore the chief cause

of death after operations, is the direct result of the presence of minute organisms, called bacteria, which probably act by stealing oxygen from the tissues, pulling down the complex fabrics, and converting the higher quaternary compounds into simpler binary products.

The object of antiseptic dressings is to prevent the ingress of these organisms, or to destroy them if already present. The chief agent employed for this purpose is carbolic acid, which, in a saturated watery solution of one part of acid to twenty of water, is very fatal to these minute organisms. The spray, under which you see operations performed and dressings carried on, has chiefly the extrusion of these unwelcome guests in view; the carbolized gauze is employed for a similar purpose, and also because the carbolic atmosphere which it insures is inimical to the development of bacteria; but if infected air has already had free access to an open wound, then it becomes necessary, by means of chloride of zinc, or the stronger solution (one to twenty) of carbolic acid, to destroy the germs already present before using the ordinary antiseptic dressings. Whatever be the final issue of the contest upon the germ theory of disease, nothing can ever imperil the stability of this mode of dressing, until, perchance, the same almost perfect results be attained by a somewhat simpler process. If the theory be finally triumphant, it seems as if it must carry with it, as a corollary or "rider," that by a thorough adoption of antisepticity in our hospitals we shall be able to exorcise the demon of "hospitalism," whether it appear in the guise of pyæmia, or erysipelas, or other septic trouble.

Of course it often happens, as in cases of operations about the mouth, or in cases of crushed hands and feet and allied injuries, that it is difficult to carry out antisepticity in its entirety; when such is the case it is still well to employ some antiseptic agent as a lotion, etc. For this purpose nothing answers better than boracic acid. Unlike carbolic acid, this agent is quite unirritating to the cuticle, while it is equally good as a disinfectant. It is only slightly soluble in cold water, but freely so in hot water, so that the best plan is to prepare a hot saturated solution, and into this dip the lint to be subsequently used. When

dry, the boracic acid forms a glittering crust of crystals on the lint, and this supersaturated material should be applied *over* a piece of lint wetted in a solution of the acid. This mode of dressing answers admirably in cases of callous ulcers of the leg, or in cases of lacerated and contused wounds in various situations.—*Med. Times and Gaz.*

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ART. II.—*The Medicine of our Time—A Lecture on the Principles and Practice of Medicine.* By LIONEL S. BEALE, M. B., F. R. S., Professor of the Principles and Practice of Medicine in King's College, London, and Physician to King's College Hospital.

Gentlemen,—Although I am well known to all of you, I can not enter upon my duties without taking up a few moments of our time in referring to matters which, though they be condemned as personal, may, nevertheless, be found not quite devoid of interest to you who are now in a position similar to that which I occupied just thirty years ago, when I attended my first course of lectures upon the Principles and Practice of Medicine in this College. Besides, a professor meeting his class for the first time, if he does not deliver a formal public inaugural lecture, will at least desire to say something by way of introduction to the great subject he has to teach. But I find myself in a position in many respects so exceptional, that I can not forbear offering in addition a few general observations concerning the new work I have undertaken, and the chair of which I am to be for a time the unworthy occupant.

It has fallen to the lot of few public teachers to hold in succession three different professorships in the same College, and to still fewer to have been trained from boyhood in the institution in which their life's work was to be carried on. Here I have been for nearly forty years as schoolboy, student, and teacher. Well nigh a quarter of a century has passed since I gave my first lecture as your Professor of Physiology. When I resigned that chair in 1869, the Council elected me to the Professorship of Pathological Anatomy then first established,

and which, I am glad to say, is to be henceforth far better administered by my friend and colleague Professor Duffin.

It has, as you know, been my good fortune to have successively filled many posts in our College and Hospital, and it is remarkable that upon no single occasion have I succeeded on account of a vacancy caused by death. To the honor and satisfaction of holding an important appointment has invariably been added, in my case, the gratification of knowing that my predecessor had attained a higher and more advantageous position. In the present instance I am more fortunate than ever, inasmuch as we not only retain the services of my esteemed predecessor in this chair, but the school is strengthened by the foundation of a new professorship and the appointment of Dr. Johnson as first Professor of Clinical Medicine in King's College. By the new arrangement the Council have added to the many great advantages we already possessed for the successful prosecution of medical work in our hospital, exceptionally well arranged for the purposes of clinical observation and instruction. If the present generation does not add to the numerous high honors in medicine already carried off by King's College men, the students can not excuse themselves by pleading want of opportunity for clinical observation, or insufficient clinical instruction. You have undoubtedly to learn much more than was required of your predecessors, but it is equally certain that the facilities for gaining knowledge have increased, and in greater degree than the exactions of examining boards. We trust then that each member of our classes will make the most of the advantages offered, and do his utmost for the credit and honor of our medical school, which is nearly fifty years old.

I propose now to say a few words upon medical science and practice, and it may be interesting if I refer briefly to some of the points in which the medicine of our time seems to contrast with the medicine of the past, and endeavor to indicate the particular direction in which, as it seems to me, medicine tends to advance, in the hope that we may be able to form an opinion regarding the main features in which the medicine of the future may be expected to surpass that which is now taught and practiced. In the first place, it must be clear even to those who

have little medical knowledge that in these days we are able to study and investigate disease more thoroughly and with greater precision than was possible even a few years ago. As a consequence, we have gained greater facility as well as increased accuracy of diagnosis, and we are able to impart to others a knowledge of the means by which such desirable ends are attained. For it is very certain that, as regards the wide diffusion of exact information, there is no comparison between the present time and the past. We can teach to others the principles by which we ourselves are guided in practice, and can give, at least in many instances, a clear account of the method we pursue in determining the nature of a particular malady; and we can, with some approach to clearness and accuracy, state the grounds upon which the particular plan of treatment we advocate is based. As scientific investigation advances—particularly the departments of physiology, minute anatomy, and minute pathological and therapeutical inquiry—will the probability of correct diagnosis in what are now considered doubtful and difficult cases be greater, and the confidence with which the practitioner carries out a definite line of treatment increased.

Even now, how many explanations which were formerly received as sufficient and final would be rejected as untenable by a second-year student! How different too is our method of teaching our profession now-a-days from that relied upon by our predecessors in the last and early part of the present century! The medical teacher of that period would tell his pupils that he had been taught to treat this or that particular set of symptoms by such and such distinguished practitioner, and he would impress upon his hearers that such and such a drug cured such and such a malady. But if his practice seemed to fail—if the patient got worse instead of better, or died outright—the treatment was not impugned, the physician's faith in it was not in the least degree shaken, but the result was attributed to some exceptional peculiarity of constitution of the patient, or to some other cause; and if the treatment failed in case after case, it was considered a proof that a change in the type of the disease had taken place. Bleeding, cupping, leeching, blistering,

purging, lowering, might be followed by untoward results, but for a long time professional faith remained strong, and it is only within a comparatively recent period that we have dared to conclude that in many cases in which a lowering plan of treatment was followed, the very opposite was indicated, and that patients who recovered, recovered in spite of, not in consequence of, the lowering treatment adopted.

But let us not boast of our new powers. Though we have undoubtedly advanced in medical knowledge, and enjoy considerable advantages on account of recent advances in scientific investigation, we have harder work to do. There is scarcely a medical question that does not require further investigation; and of the points considered settled, how many there are that will have to be further investigated, and the conclusions respecting them modified or changed! And though we have reason to be proud of the constant additions that are being made to our knowledge by self-denying workers, we must, at the same time, feel disappointed at the slow and slight influence which the results, for the most part, produce upon our practice. And it unfortunately sometimes happens that the men who are doing their utmost to advance knowledge do not have as much confidence reposed in them by patients as their more self-confident brethren, who convince themselves and their friends that they know all that is to be known. It is as remarkable now as it has been in all previous time, that the most thoughtful and best informed, as well as the most conscientious men, do not gain the confidence of the public, nor even of highly intellectual people, more readily than practitioners who are not equally burthened.

Nay, great lawyers skilled in the art of cross-examination and the extraction of truth have been led to rely upon the dogmatic assertions of quacks, and persuaded to reject the sound arguments propounded by highly intelligent, upright, well-informed men. At this very time we find side by side with intelligence, enlightenment, honesty, and devotion, the most abominable shams, mockery, and dishonesty. Nay, falsehood oftentimes seems to command more attention than truth; and too often pretence is believed, and honest statements doubted and suspected. But true and false systems are not peculiar to

medicine. At this very time we have members of the British Association for the Advancement of Science investigating, or proposing to investigate, whether certain words written upon a slate were written with a pencil moved by the hand of a living man or by some spirit-scribe! There are even scientific authorities who are Fellows of the Royal Society who believe that chairs and other things will jump about, that human beings may pop out of one window and in at another supported in the air, as well as a number of other things contrary to science, sense, and the experience of millions.

With the advance of knowledge we have to regret the advance of pretended knowledge—sham—and it would almost seem that as truth spreads, imposture must also spread; and in matters medical we find now, as formerly, the quack may gain a high reputation and make a fortune, while clever, honest advisers may starve. I heartily wish we could with truth assert that it was only in the time of the Roman Empire that a certain class of practitioners brought the habits and arts of parasites into the medical profession—men supple and cringing, who studied even more to please than to relieve. Was it in that corrupt age only that the rich preferred practitioners under whom they could indulge every caprice, and in whom they could find apologists for habits and practices that were altogether bad? “What gives vogue to a physician,” says Galen, “is not science, but skill in flattery. To him who is the best sycophant everything becomes easy; to him every door is open. In a short time he grows rich and powerful.” Rome, too, like the great capitals of the modern world, had her ultra specialists. Galen tells us that some confined their practice to the treatment of the uvula, or the eyelashes; others attended to dropsy, or fistulas. Some restricted themselves to the treatment of old men; others preferred to advise the strong and robust. Herbs were used by certain medical advisers, while others trusted only to gymnastic exercises, or were guided by the stars or dreams of their patients, or relied upon supernatural or mysterious agencies, and “all these folk had the presumption to call themselves physicians.” But in those days, as in these, the intelligence, honesty and earnestness of some in a measure

checked the dishonesty, pretence, and selfish rapacity of others. Galen remarked that in his time the only difference between certain medical pretenders who dwelt in Rome and robbers who pursued their career upon the highway was that the latter camped in the mountains and the former lived in the city. As the medical career became less honorable, the nobler minds ceased to be attracted to the pursuit of medicine as a profession. Practitioners became mere confident and vulgar braggarts, thought only of lucre, and studied to amass large fortunes by quackery and sycophancy.

To keep medicine pure, and to teach her followers to be high-minded, forbearing, and good, to encourage moral as well as intellectual ambition in those entering the Profession, to teach them to choose a life of hardship in preference to one of success attained by unworthy means, as well as to encourage devotion to the work of advancing medical knowledge whenever circumstances were favorable, have always been considered to be among the duties of those to whom is entrusted the responsibility of teaching the young in an institution like ours; and I feel sure that in no school, ancient or modern, have more persistent efforts been made to give practical effect to these precepts than in King's College. More earnest teachers, more honorable practitioners, more upright men than those who have preceded me in this chair, have never devoted themselves to the work of teaching the young. Long and honorably have they labored to promote the best interests of medicine. Nay, they labor still, and the Profession and this College have good reason to be thankful for the service they render and have rendered. Names more honored than those of the four distinguished professors who have successively discharged the duties of this chair from the year 1830 to the present time are not to be found in any profession.

It is a matter of the highest gratification to me to commence my career as a Professor of the Principles and Practice of Medicine during the lifetime of all former professors, and though I can not hope to take the high position as a physician more than one of them have attained, I am sure I shall find them all among the most considerate of my critics, and ever ready to



overlook the shortcomings of their latest successor. Dr. Francis Hawkins and Sir Thomas Watson taught here at the foundation of the College, now nearly half a century ago, and, full of years and honors, are, happily, still able to take an active part in the important work of legislating for medical education.

There seems to be something in connection with our Professorship of Medicine which favors health and longevity. For I remember, at our very last prize distribution, Lord Granville, who was in the chair, congratulated a former Professor of Medicine upon his health and vigor at the age, I think, of eighty-five; and I doubt whether there is not yet another who has attained, if he has not surpassed, that advanced age, and who, I think, must be in the possession of some wonderful secret remedy, which enables him to keep young in health and strength as years roll on.

Not a few of my colleagues, and several distinguished teachers in other schools, are deeply indebted to former Professors of Medicine of King's College, not only for early instruction and for counsel, but for having shown them what a physician ought to be. They have encouraged us to think and to work, and have impressed us with the importance of advancing and spreading medical knowledge, as well as of performing our duties to the sick with considerate care. We must never lose sight of the advancement of medical knowledge; for upon that depends the position which our profession takes in the intellectual world. It determines the kind of estimate that will be formed of us by the public. Thankful for care and kindness during sickness our patients will naturally feel, but we shall not be respected as were our forefathers, unless at the same time many of us do our best to promote the application of scientific methods to medical inquiry, and take our part in the hard and unpaid work of scientific medical investigation, and thus become in every way as truly followers of science as those who profess to devote themselves exclusively to her service.

Of the teachers in our medical colleges and schools, how many have been successful in advancing our knowledge of the special subjects of which they had to treat. Not a few have been eminent as original investigators, and have helped in the

scientific work by which the age in which they lived will ever after be known. Many of our most distinguished physicians and surgeons in days gone by have earned in science reputations as great as in their practical calling. Some practitioners have been great anatomists, others physiologists, others have studied and helped forward several departments of science—nay, there is not a branch of scientific information which has not been advanced by medical practitioners. And it is scarcely too much to say that but for those members of the medical profession who have also been scientific investigators in many departments, British science would never have had any distinctive mark. And to me it seems certain that the influence and position of medicine in Great Britain will be maintained only so long as many members of it earn scientific reputations. If we had to take all our science second-hand, is it not obvious that the esteem in which the actual scientific investigator would be held by the public would be far higher than that entertained for us, of whom it would be said that we merely made use of and practically applied the discoveries made by other men?

It is by scientific inquiry that the greatest advances in medical work have in all ages been made; and every year we live, the dependence of the progress of medicine upon the progress of science becomes more and more manifest, and is more and more generally believed and acted upon. From time to time, no doubt, new remedies will be discovered, as many have already been, by accident or by experiments hardly to be correctly called scientific; but from this side we have, indeed, little to expect, compared with what we are certain to gain from the extension and development of various methods of scientific research. It is in this direction that medical work has been of late so manifestly tending, and, as Professor Baxter so eloquently told us yesterday, it is of the highest importance that we should all try to develop and encourage a scientific habit of mind.

But for many years past it has been only too evident that the tide of scientific distinction has been setting somewhat against us. Causes working in the Profession, and more pow-

erful agencies outside, have conspired to deter young practitioners from taking up scientific pursuits. There has been a strong effort to keep doctors to doctoring, to disparage the scientific labors of the scientific men in our profession, and to preserve scientific investigation as much as possible for those who take up science as a profession, and for others who are not engaged in medical work. Not a few of those who have endeavored to lead opinion in this direction against us have been distinguished for their boastful proclamations about liberty of investigation, and the exceeding largeness of their views. What the scientific liberal may be in theory is not quite clear, but his practice seems to be based upon the doctrine that liberals ought to be liberal only to liberals. Men form societies and coteries for the purpose of exalting and spreading their own particular kind of truth, and for proclaiming that the truth taught by others is not truth at all. Science is to be a profession—a brotherhood—and the workers and investigators are to constitute themselves into an infallible conclave apart from men of other callings. The scientific caste is to be recruited by the introduction of those only who have been specially trained for scientific research. In this way the gate to the fields of science is to be locked, and there is to be but one key, which will always be in the possession of those self-styled high-priests of science who have of late years acquired such renown, and have assumed such high authority. They will take care that only those who will abjectly submit shall pass the portals of science. But science is free to all. If bars, and gates, and walls are erected they must be broken down. Men of every trade, profession, or calling are free to work at science; and though from time to time, and in certain places, exclusive cliques become powerful, the great body of scientific men spread over the world will interfere and restore the rights that have been unjustly seized.

Governments and individuals may endow research, but unendowed scientific workers and thinkers must be encouraged and protected in every possible way, for it is from such men, who are the last to seek for place and bow to the authority of the hour, that original work will come. It is miserable to hear

the frequent cringing appeals and read the begging letters about "the endowment of research." The very last thing that is likely to be gained by endowment is discovery. Men are much more likely to discover if they are not paid. The value and importance of new work will probably be found to diminish as the rewards for original inquiry increase. Endowment would damage science in many ways, and it can not be too widely known that many of those who have worked most successfully as original inquirers would have strongly objected to the proposals which have lately been made. Of all men, investigators and discoverers are the most independent. What they desire most is freedom—thorough liberty to work when and how and where may seem best to them. What such men care for least is income, and what the majority would refuse with scorn would be the offer of a salary on condition that they devoted themselves to research. A man could not think exactly when his master might order him to do so, nor can he profitably work at original investigation for a stated number of hours per diem. He may, as the world would say, idle about for days, and suddenly wake up one night at the moment the means of pursuing a particular inquiry flashed, as it were, across his mind. He would get up, begin work at once, and go on, and on, and on, without rest, until the whole matter appeared pretty clear to him, and what remained to be done was mere laborious investigation. The idea of a man being paid for work like this, as if it were possible to measure it and find its value in money! Depend upon it, men who can advantageously prosecute research don't want to be paid for it. So strong is the longing to work, that such men are quite sure to find the means of living—and they want no more—in order that they may prosecute their inquiries. I have never come across an original investigator who was prevented from investigating by want of means. Plenty fancy they would make great discoveries if they had the means, but there is every reason to believe they are quite mistaken. I very much doubt whether a really original mind, that lives but to work and think, can help working and thinking. Everything will be made to give way to the prosecution of the dominant idea.

Numerous instances convince us that the means, after all, is the least part of the business, and if there is sufficient strength of character to discover, there will be more than enough to find the means to do so. Every now and then one comes across a student who thinks himself a genius, and so, instead of being guided at the outset of his career by his teachers, he goes his own way, and wastes in what he dignifies by the name of original work the time that would be well spent in mastering the elements of anatomy and chemistry. In consequence, he gets rejected at his examination, and regards himself as an ill-used and blighted genius. The idea of a man who was able to intently devote himself to most difficult and laborious work not having strength of will to compel himself to master various subjects of study so that he might scrape through an ordinary examination! Our real investigators will think very little of such difficulties.

But of all the hindrances to scientific progress in medicine, the most unfortunate and the most serious will be found to be that which has arisen from the outcry recently made against all men who had to perform experiments upon living animals. People self-confident and most arbitrary, having no knowledge of science or respect for scientific methods, have not hesitated to publicly condemn as brutes some of the best of men, and to deliberately cause acute pain in the most sensitive of living beings, in order that they might not fail in their efforts to persuade the public that laws ought to be enacted which would prevent new information being gained in England from experiments upon the nerves of frogs and other animals.

Formerly cruel exhibitions were interfered with by law, upon the ground that by them the people were likely to be demoralized and degraded, because they might help to excite and encourage feelings which all right-minded persons would earnestly desire to repress, and because they outraged public morals. But in recent years a new principle upon which to ground legislation has been evolved and acted upon. The interests of the animal are henceforth to be paramount, and are to be forced under the notice of British law-makers. Though its sufferings might benefit an individual man, nay, even though humanity

might reap great advantage, or even the lives of men be saved, the animal must be protected from pain!

In deference to the agitation of a few enthusiasts, wrongly represented to be public opinion, the English Legislature has been forced to pass laws by which severe punishment may be inflicted upon any scientific man who, without a license, divides the nerve of a living frog or fish. Men may ill-use one another, and notably their wives, by violently crushing their muscles, stretching, tearing, or smashing their most delicate nerve fibres, almost with impunity. Somewhat severe and not very gentle experiments, too, may be performed upon human beings who are not wives, at very moderate cost indeed. It appears that the hands and legs of a boy of fourteen may be tied together with his boot-laces, and the boy stripped naked, being thus prevented from inconveniently struggling, may be thrown upon a wasp's nest, and there successfully and severely stung. After having been left in that position for a sufficient time, he may be removed for the purpose of being carefully examined by the experimenters—all for the modest sum of 20s., in addition to 12s. 6d. for expenses! Now, if you tie up a frog with silken cords without being licensed, and place a particle of mustard upon one of his toes, or irritate one of his nerves, you may have to pay a penalty of £50!

But one must not be too hard in these philosophic days. Our legislators have probably been much affected by the new philosophy. Evolution teaches that man in his present state is but an animal, and exhibits distinct traces of his lowly origin. Man's derivation from creatures arboreal in their habits is considered proved. These latter may be traced backwards through creatures of the frog type to certain molluscs. No wonder, therefore, that it has been deemed necessary, in accordance with modern discovery, to place men and frogs in the same category; for though frogs can not make laws for men, men must remember that at an early period of development they actually possessed many of the characteristics of the frog. Ought we not, therefore, to extend protection to the unfortunate descendants of the residue of the early frog community, who, failing to differentiate themselves into higher forms, were doomed to continue to

develop frogs only—for, at one time, were not all frogs so nearly equal as to be indistinguishable from one another? Slight, and at that time inappreciable, advantages in the battles of frog-life led at last to those divergences in structure which culminated in the highest forms of present living things. Community of origin being acknowledged, philosophic man will regard with affection not only the lower creatures which are of use to him and are his companions, but he will revere his frogs, as the type without which neither they nor he would have existed. The solidarity of men and animals is acknowledged by all, and no government will long retain power that does not recognize this great principle and pass laws in accordance with the facts revealed by evolution. But we are only at the beginning of the construction of a code of new beneficent universal laws. Already the winkles, and the oysters, and the lobsters have organized a powerful political party, and a cry is ringing from the lowest deep, "Are we not also brethren?"—*Med. Times and Gaz.*

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ART. III.—*Anhidrotics.* By J. MILNER FOTHERGILL, M. D., M. R. C. P., Assistant Physician to the City of London Hospital for Diseases of the Chest, Victoria Park.

This is a new term which is rendered necessary by the progress of therapeutics. Anhidrotics are agents which check profuse perspiration. The term hydrosis\* signifies excessive sweating, and hydrotic is the name of an acid found by Favre in sweat. By the addition of the alpha ( $\alpha$ ) privative to this adjective, we can form the word anhydrotic, a useful addition to our nomenclature; as we find that there are several remedial agents which possess the property of checking profuse perspiration.

Ere proceeding to consider these agents, it may be well to clear the ground a little by reviewing some points in connection with the function of the sudoriparous glands. These glands are thickly scattered over the surface of the body, and by their

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\* Hydrosis (Dunglison).

activity the temperature of the body is regulated in health. When water assumes a gaseous form much heat is rendered latent, or in other words, so much cold is produced. When the body heat is high, as in severe exercise, where an abnormal amount of heat is produced, the surface of the body begins to glow, and immediately afterwards the skin becomes bedewed with perspiration. By the evaporation of this effused sweat the heat loss is increased, and so the normal temperature is maintained. On the other hand, in cold weather the skin is dry, and the invisible perspiration is reduced to a minimum, and thus the body heat is conserved. The white dry skin of cold weather may give way to blue venous congestion, and yet the sweat glands remain inactive. In disease we find that the vascularity of the skin and functional activity of the sudoriparous glands are not directly proportioned to each other. For instance, in the dry burning skin of rising fever there is no perspiration, as Leyden found; and when the sudoriparous glands become active, or are incited into activity, the temperature falls. The rash which is produced by belladonna is not accompanied by perspiration. In conditions of syncope and of terror, where the skin is blanched, the sweat-glands are active and the cutaneous surface is studded with beads of perspiration.

The condition of a "cold sweat" teaches us that even when there is a condition of arterial anæmia, and the skin is cold and blanched, the sudoriparous glands may be, and are active. This activity is rendered possible by the large plexus of capillaries at the base of each sweat-gland. Such cold perspirations are most commonly found in conditions of exhaustion.

So much for the glands; now for the characters of the secreted fluid. Sweat is a secretion and not a transudate, under any conditions, as is shown by the entire absence of albumen. Following the description of Carpenter, sweat is normally an acid fluid; this is due to the presence of some volatile acids. In certain abnormal conditions the sweat becomes very sour, as in rheumatic fever for instance. When, however, sweating is profuse and prolonged, the secretion becomes neutral, or even alkaline. Whether this be due to the mere lack of the normal acids, or to the presence of alkalies in excess, has not been as



yet determined. When the quantity of fluid secreted by the skin is augmented, the bulk of solids excreted is also increased. The salts of the organism are thus much reduced, and the debilitating effects of profuse perspiration become readily intelligible. The phosphates and chlorides are specially reduced by profuse perspiration. In addition to these substances, nitrogenized matters are eliminated by the skin to the extent of 100 grains per diem, especially when the kidneys are not functionally active. With these, however, we are not at present concerned.

It is obvious, then, from the foregoing statements, that in conditions of debility, and where there exists a tendency to exhaustion, profuse perspiration becomes a serious matter. The greater the debility, the stronger the tendency to profuse perspiration; the more the perspiration, the greater the exhaustion induced. It is clear then that any check to the excessive sweating must have the effect of breaking, at one point at least, the vicious circle, which is ever widening. To economize the loss going on is practically equivalent to increasing the body-income, and to the assimilation of much more food. If the sweating go unchecked it constitutes a drain, which will often effectually counterbalance any improvement which can be brought about in the nutrition. This is especially seen in such an exhausting disease as phthisis. The effects of checking the profuse sweating are also very satisfactory; and when this is achieved improvement commonly is inaugurated.

Many remedial agents are used to check profuse perspiration. Some are administered internally; others applied externally. Of the latter the mineral and vegetable acids are the most useful. They are added to water in such quantity as to form a weak solution which is applied with a sponge. This cold sponging with vinegar and water is a useful measure. Heat applied externally in the form of sponging with water as hot as can be borne has been found by Dr. Druitt to be useful in diminishing the excessive perspiration of phthisis. Here is furnished a good illustration of the fact that cutaneous vascularity is not necessarily associated with activity of the sudoriparous glands; but that at times the opposite rather is the case.

Of the remedies administered internally the chief are dilute phosphoric acid; other acids; astringents, mineral and vegetable, as sulphate of copper, acetate of lead, tannin, or gallic acid; oxides, as the oxide of silver, or oxide of zinc; tonics, as quinine; and some members of the solanaceæ, as belladonna and hyoscyamus.

Dilute phosphoric acid is often useful, given either at intervals during the day, or well diluted with water, and sweetened with sugar, and drunk as a beverage during the night. It may be usefully combined with tincture of belladonna at bedtime. Dilute sulphuric acid, especially in a sulphate of magnesia, often gives satisfactory results.

Astringents of all kinds are as useful in hydrosis as they are in any other form of flux. We do not yet know how astringents act; we know that they produce their effect neither by coagulating albumen nor by contracting circular muscular fibre—the two explanatory hypotheses usually given in textbooks. Sulphate of copper is a powerful astringent, and checks night-sweats. It is a good agent to combine with opium where the cough of phthisis is destructive of sleep; and counteracts the effects of the opium upon the skin, as well as checking the existing hydrosis. It is well to give the copper and opium in pill, together with pil. al. et myrrh., in order to keep up the action of the bowels; which are so liable to be locked up as one of the undesirable and unsought outcomes of the use of astringents. The astringent forms of iron are also useful, acting both as astringents and tonics. Acetate of lead is rarely resorted to in excessive activity of the sudoriparous glands.

The vegetable astringents, tannin and gallic acid, are used in excessive perspiration, as they are elsewhere in profuse secretion. They are not usually given alone, but are combined with mineral astringents and acids. Thus: Sulph.  $\mathfrak{D}$ i., ac. phosph. dil. mxx.; inf. rhataniæ,  $\mathfrak{z}$ i. is a good form of mixture in profuse perspiration in the different forms of phthisis, and may be given three times a day; and be accompanied by the copper and opium pill at bedtime with advantage. If there be also alternating periods of burning heat, then quinine may be added to the mixture, and will be found to exercise a good effect. Ringer

states that if small doses are ineffective, larger doses, six or eight grains given at once, are to be resorted to. He also advocates the combination of quinine, with sulphate of zinc and sulphuric acid at bedtime.

The oxides of silver and of zinc are also much used to check hidrosis, the oxide of zinc being largely used for this purpose. It is found very effective, especially when combined with hyoscyamus. It is usually given at bedtime, and controls the exhausting night-sweats of phthisis fairly efficiently. It is a powerful agent when given alone, but the combination with hyoscyamus is more potent. There seems good reasons for supposing that hyoscyamus possesses an influence allied to that of its more potent congener belladonna. Like most combinations of agents of allied properties, the union of oxide of zinc with hyoscyamus is more certain than either given alone.

The most potent of all anhidrotics, in my experience, is unquestionably belladonna. We are indebted to Dr. Sydney Ringer for our knowledge of this property of belladonna; and the debt we owe to him can only be sufficiently estimated by those who have an extensive experience of phthisis, and who give the drug a fair trial. I have no hesitation in saying that the use of this agent completely changes the aspect of many cases of pulmonary phthisis. For the arrest of the exhausting night-perspirations of phthisis, belladonna is as potent as digitalis is in giving tone to a feeble heart. It is quite true that neither is very effective in the last and final stages of disease, for indeed nothing is very potent then; but in the early stages the action of each is very pronounced. In the night-sweats of spreading caseous pneumonia, the administration of belladonna is followed in almost all cases by a decided arrest of the flux; and in many cases the arrest of this flux is accompanied by immediate improvement. A few of the worst cases only go on entirely unaffected. In the colliquative sweats of the last stage, when the lung is breaking down extensively, the influence exercised is but small; still it usually palliates the drain to some extent even then. The loss of the salts of the body in profuse perspiration quickly exhausts the system; and the arrest of this drain commonly permits of the other measures

being effective in improving the general condition. While the loss goes on unchecked improvement is impossible.

To produce these effects it is necessary, however, to use larger doses than those spoken of by Dr. Ringer. He speaks of from 1-200th to 1-100th of a grain of atropine given hypodermically; and of from 1-80th to 1-40th, by the mouth. I have had no opportunity of trying the hypodermic method; but as to the dose given by the mouth, I usually commence with 1-75th of a grain, and go up to 1-25th; the latter dose rarely failing. I am inclined to think that in Mr. William Murrel's sixty cases referred to by Dr. Ringer the large proportion of failures (from 8 to 10 per cent.) was due to some extent to his not pushing the drug. When 1-75th is ineffective, I prescribe 1-50th; if next week that has failed, 1-25th is ordered. This usually produces the desired effect, after which smaller doses will maintain it, and may be continued. For instance, in one case at Victoria Park Hospital, on July 22d, 1-50th was ordered; the patient at the same time taking a mixture of iron and strychnia, with ℞ii. of sulphate of magnesia, three times a day. This did well for a week or two, when the night-sweats returned, so that on August 19th the dose was increased to 1-25th. The effect of this was pronounced, and on the 26th it was reduced to 1-50th again; and on September 9th to 1-75th, which dose keeps the sweats down satisfactorily.

As to the number of cases I have treated by belladonna, I have kept no account; but during the week, July 16th to the 25th, this year, an intensely hot week, 74 patients, out of a total of 300, were taking belladonna at bedtime at Victoria Park Hospital alone. At the West London Hospital I had at least thirty more during the same week. Thus I had 100 at one time under the influence of belladonna. Consequently my experience of the use of belladonna in the treatment of hidrosis is not a very limited one. It enables me to say that belladonna or atropine may be freely used without apprehensions as to any serious toxic effects appearing. Even with 1-25th of a grain of atropine every night the patients do not complain much; some dryness of the throat and a little indistinctness of vision being all; while all prefer these to their dreaded sweats. These

effects wear off in a day or two after the drug is discontinued, or even the dose reduced. I have not yet seen any alarming symptoms produced. This I attribute to the gradual increase of the dose; and I have little doubt that if 1-25th were given at first, many cases would show marked toxic symptoms. But where there seems a tolerance of the drug, the dose must be increased; and may safely be increased. Belladonna is an agent which produces marked toxic symptoms long before a fatal dose is reached; much the same as is the case with strychnia. It is not a treacherous drug by any means, and may be used with confidence. Dr. Charles Kelly ("Practitioner," March, 1873) found that in the treatment of whooping-cough, half an ounce of the tincture in twenty-four hours could be safely taken by children of three or four years of age. Without advocating such large doses, until a further experience demonstrates their safe use, I may say that from 1-75th to 1-25th of a grain of atropine, and from 20 to 35 minims of the tinc. belladonna are quite safe doses. The atropine may be given in pill; while the tincture of belladonna is best combined with dilute phosphoric or sulphuric acid (mxv.), and may be taken at bedtime or when the patient awakens about two or three in the morning. It is my intention to try larger doses for the relief of the colliquative sweats of advanced phthisis. As to the actual facts of toxic symptoms of the seventy-four cases mentioned, one had some dryness of the throat; a second had some derangement of the pupils; and a third some indistinctness of vision on getting out of bed in the morning, which quickly wore off.

If any doubts existed as to the casual associations betwixt the administration of the belladonna and the arrest of the hidrosis, they are dissipated by the fact that on omitting the medicine the perspirations returned—as when the patients neglect to attend the hospital, and so are without their medicine. On again taking the medicine the sweats disappear. This puts the matter beyond doubt or cavil, especially when combined with Ringer's experiments, which are well worth perusal.

A few words now as to the practical use of belladonna in the treatment of phthisis. The most common cases are those where

a slowly-spreading caseous pneumonia involves one lung to the second, third, fourth, or fifth rib. There is a fast pulse, over 100, a temperature over 100° F., cough, profuse night-sweats, and rapid wasting. It is in these cases that the utility of belladonna is so well seen. As soon as the profuse night-sweats are checked, the patient begins to pick up; the appetite returns; food is better assimilated; the sleep is refreshing, and the mind is much relieved. In fact, the arrest of the drain of salts by the hidrosis at once inaugurates an improvement; and the good effects of the other measures resorted to are not lost, as before. It is well at the same time to give the patient tonics, iron with strychnine or quinine, together with mineral acids; good food in liberal supplies, and cod-liver oil if the stomach will carry it. The association of night-sweats with debility is notorious. Fuller recommends some alcohol and food to be taken at bedtime invariably. When the morning sleep is deep the sweats are most profuse, and are "to be in part avoided by keeping awake, which is often done purposely." (Marshall Hall.)

Finally, my experience of pulmonary phthisis is not depressing, but rather encouraging, especially in its early stages. It has been much more cheering since I have employed belladonna extensively. In some cases where the belladonna does not act as potently as usual, oxide of zinc with hyoscyamus is found to be effective. In those cases where the cough at night prevents sleep, opium may be given with belladonna. The belladonna prevents too great action on the sudoriparous glands, and the combination is very effective. To prevent too much action in the intestinal canal, it is well to give the neurotics in pill with aloes. A pill of morphia ( $\frac{1}{2}$  a grain), atropine 1-30th in three grains of pil. al. et myrrh., is used by me at Victoria Park, and acts satisfactorily. It is not always an easy matter to avoid the undesirable effects of therapeutic agents; and when they must be resorted to, it becomes necessary to provide against and ward off these effects by suitable additions and combinations. There are no serious drawbacks to the use of belladonna, and the dry throat and indistinctness of vision are usually borne by the patients without complaint.

The arrest of the profuse and exhausting night-sweats is

usually followed by more or less belladonna very rarely fails to tematic use of anhidrotics mance with them, and especially as well as the Profession, are which I trust this paper will dting. Belladonna seems to be the sudoriparous glands as it Heidenhain ("Pflüger's Archi belladonna may be found to a maxillary by acting on their e be its action in the arrest o applied locally as well as wher hypodermically.—*London. Pr*

**Communication of Syphilis**  
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## CLINICAL RECORDS.

"Ex principiis, nascitur probabilitas: ex factis, vero veritas."

**ART. I.**—*On the Operation of Vesico-Vaginal Fistula—A Comparison of the Methods of Operation of Dr. N. Bozeman and of the Author.* By Prof. GUSTAV SIMON, of Heidelberg; Illustrated with Twelve Wood Cuts. Translated from the Original as published in the "Wiener Medizinische Wochenschrift," Nos. 27 and 32, July and August, 1876, by A. C. BERNAYS, M. D., of St. Louis, Mo., with Additions and Notes by the Author and the Translator.

## INTRODUCTORY WORDS BY THE TRANSLATOR.

It was a certain sense of duty, by no means of pleasure, that prompted me to translate the following scientific article. As an apology, I can mention that the subject here considered is one of especial interest to American surgeons. To a young American, whose medical education has been exclusively attained in Germany, where American surgery has always been praised before me by my teachers, this work certainly afforded no pleasure. But as Dr. N. Bozeman, of New York, has deemed it correct to publish an article about certain things treated of in this paper in a manner not exactly in harmony with the facts, I think it is no more than fair to put Prof. Simon's statements before the profession in America. I assisted at every one of the operations, in Heidelberg, mentioned in this article, and examined their results. I think therefore that the translation, if not liberal in every particular, at least gives the sense and exact meaning of the author.

In the Fall of 1874, Dr. Bozeman, of New York, came to Heidelberg in order to become acquainted with my method of operating for vesico-vaginal fistula, and to show us his own. I was glad of the opportunity to see Dr. B.'s method, and, if possible, to be benefited by it; and therefore I instituted a series of operations, in which each of us operated on several cases, using our own methods, forming, as it were, a tournament. All operations were performed in the clinique in the presence of the students and assistants, several of them also under the eyes of our celebrated colleagues, Spencer Wells and Kœberlé. The



after-treatment, which Dr. B. considered necessary in his cases, was conducted by himself with the help of my assistants, who followed his directions in a most scrupulous manner. The removal of the sutures and all subsequent examinations of the cases were performed in the clinique.

Our methods differ very materially. While I operate in the "Striss Rückenlage," coccygo-dorsal position (an exaggerated lithotomy position), B. places his patient in the knee-elbow position; while I strive to dislocate all involved parts to the surface, B. operates with the parts in situ; while B. pares his edges to the far greater part with the scissors, I almost exclusively use the knife; while B. applies a very complicated button-and-wire suture, I use the simple-knot suture with silk thread; and while B. uses the catheter en permanence during the after-treatment, and frequently gives large doses of opium, I do not take the slightest measures of precaution; allow the urine to be passed unaided, and the patient wishing, I allow her to leave the bed on the second and third day. In cases which require preparatory treatment in order to render the fistula accessible to instruments, I take all the necessary steps immediately before the operation, while B. in such case prefers gradual preparation.

#### DESCRIPTION OF THE CASES.

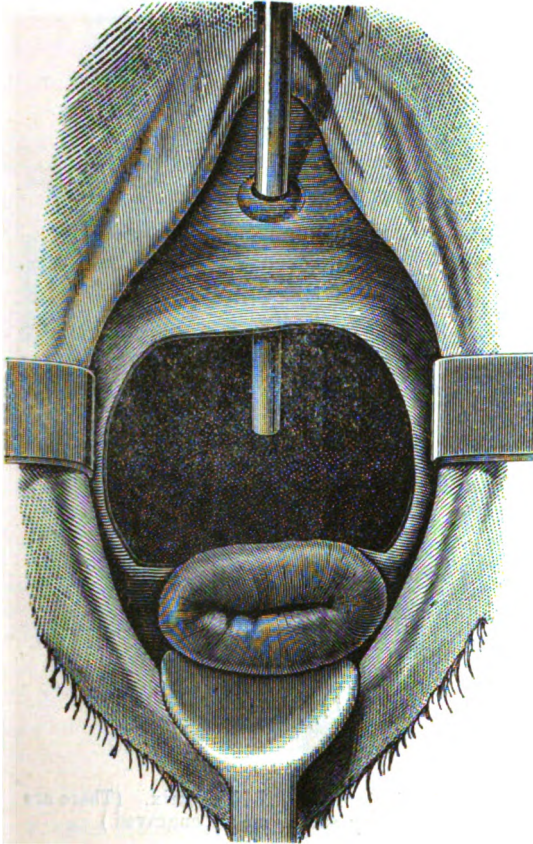
The cases operated on by myself were the following:

CASE I. (See figures 1 and 2 of the plate).—A Russian, twenty-two years of age, of small stature, shows a very large defect. The whole bottom of the bladder up to the os uteri and the upper part of the urethra were wanting; of the latter only  $2\frac{1}{2}$  centimetres (1 inch) were left. (See figure 1.)

The defect reaches into the lateral parts, and upwards into the lateral vaults of the vagina. The bladder had prolapsed as far as the introitus vaginæ. An operation had been performed in Berlin without result.

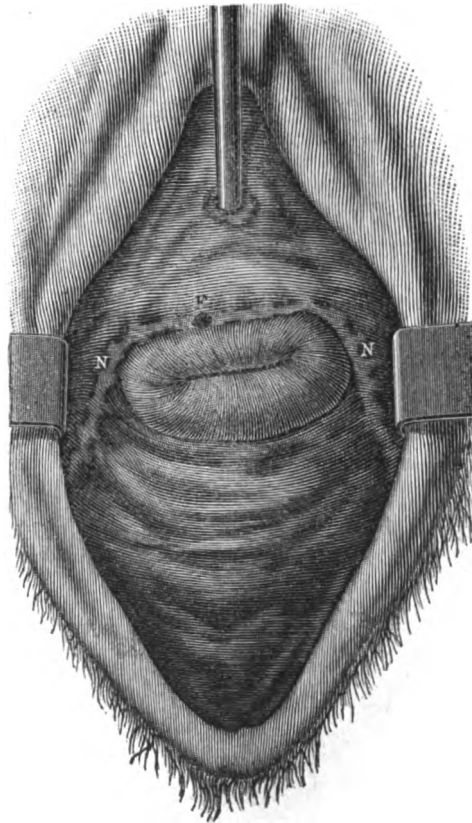
I had left it optional with Mr. Spencer Wells, who was staying in Heidelberg for several days, and with Dr. Bozeman, whether I should operate on this large defector on a fistula of but  $1\frac{1}{2}$  or  $1\frac{1}{2}$  centimetres in diameter, which also was at my disposition. Both gentlemen desired to see the operation on the large defect.

Figure 1.



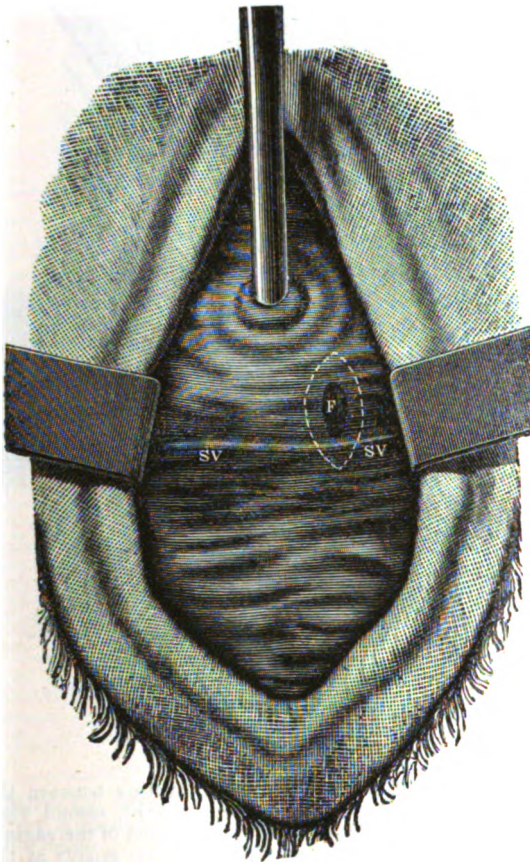
Original Defect.

Figure 2.



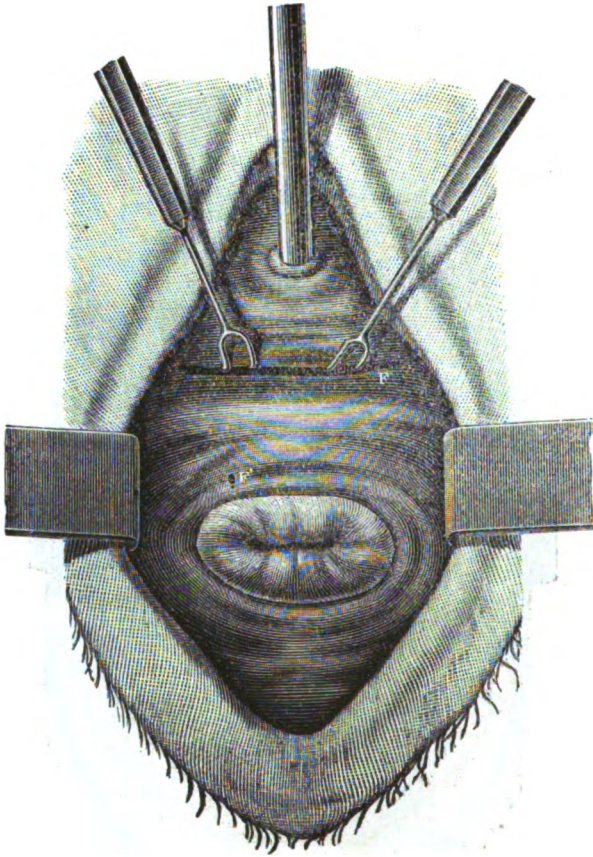
F, remaining little fistula; N N, cicatrix. (There are too many suture marks engraved.)

Figure 3.



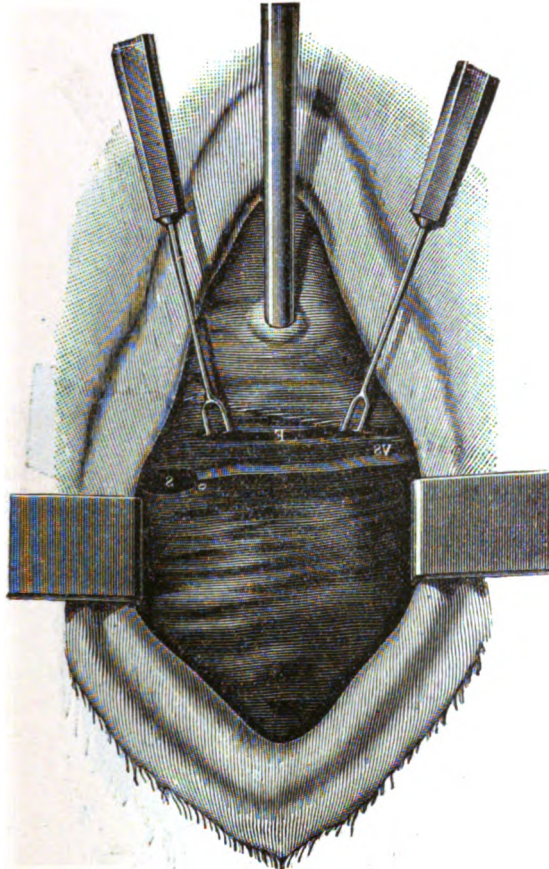
F, vesico uretero-vaginal fistula. ; S V, kolpokleisis.

Figure 4.



F, transverse fistula at the place of juncture between the urethra and the vesico-vaginal septum; F', second very small fistula caused by the gradual dilatation of the vagina. The contraction of the vagina and the deep groove at the place of location of the fistula could not be represented in the engraving.

Figure 5.



Before the operation. F, fistula; S V, atresia of the vagina; S, remnant of the vaginal canal. The deep groove of the urethro-vaginal and the vesico-vaginal septum at the location of the fistula is not engraved.

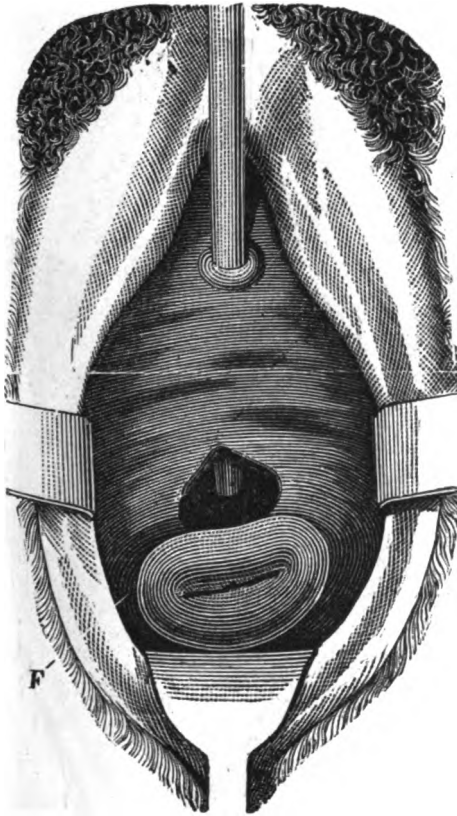


Figure 6.



F N, cicatrix of fistula; F, remaining little fistula, laterally of the suture; S V, atresia of the vagina; H S W, posterior wall of the vagina.

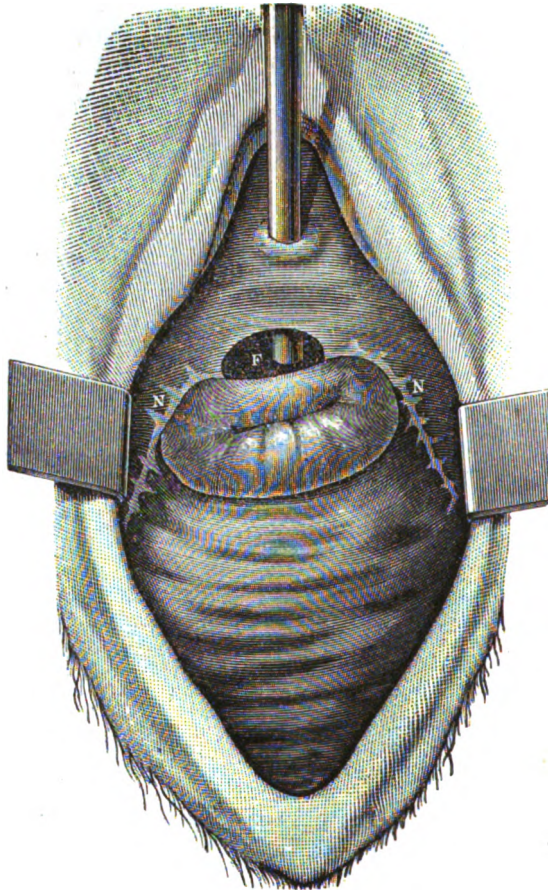
Figure 7.



Fistula at the anterior lip of the os uteri. The fistula is drawn somewhat too small in its transverse diameter.

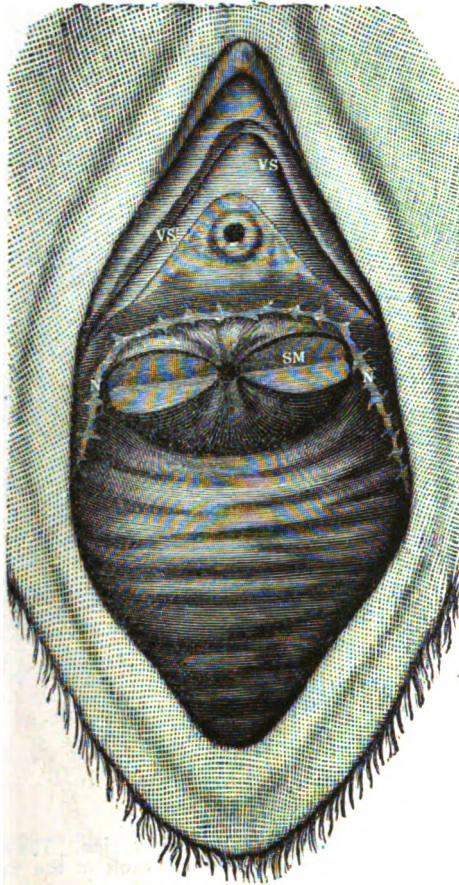


Figure 8.



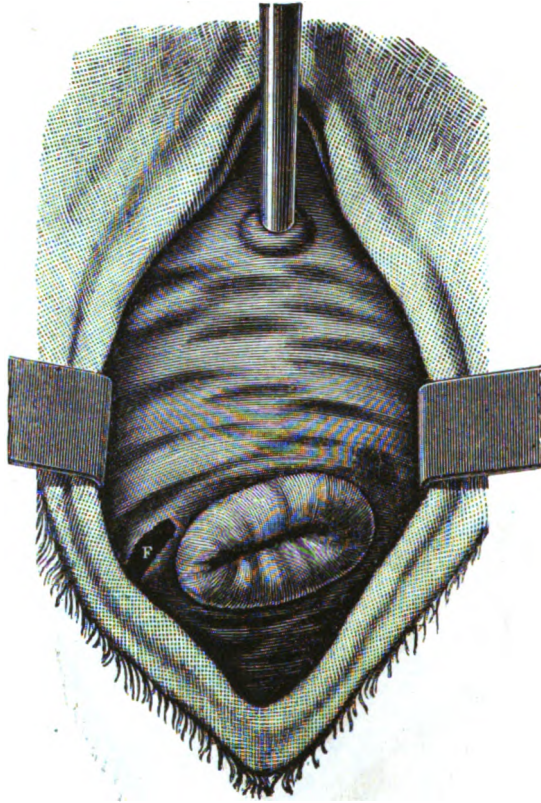
Shows the fistula left after Bozeman's operation of the fistula represented in figure 2. F, fistula; N, cicatrix. (Too many suture marks here.)

Figure 9.



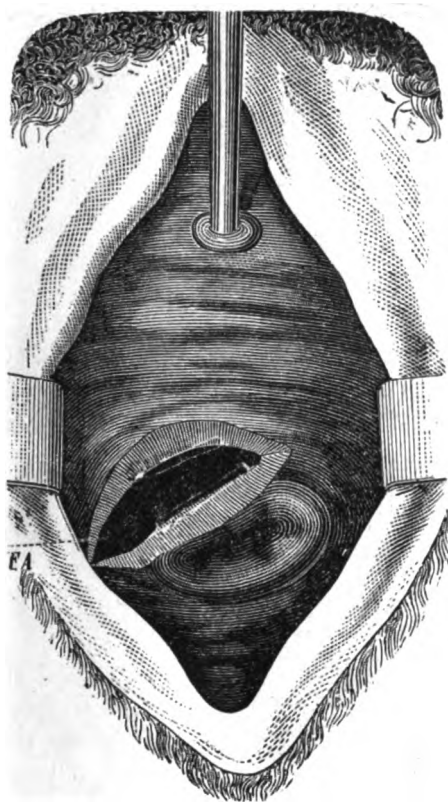
Shows fistula (figure 8) after cure. N, cicatrix; V S, ves-tibular section; S M, split of the os uteri, Jobert's section. (There are also too many suture marks here.)

Figure 10.



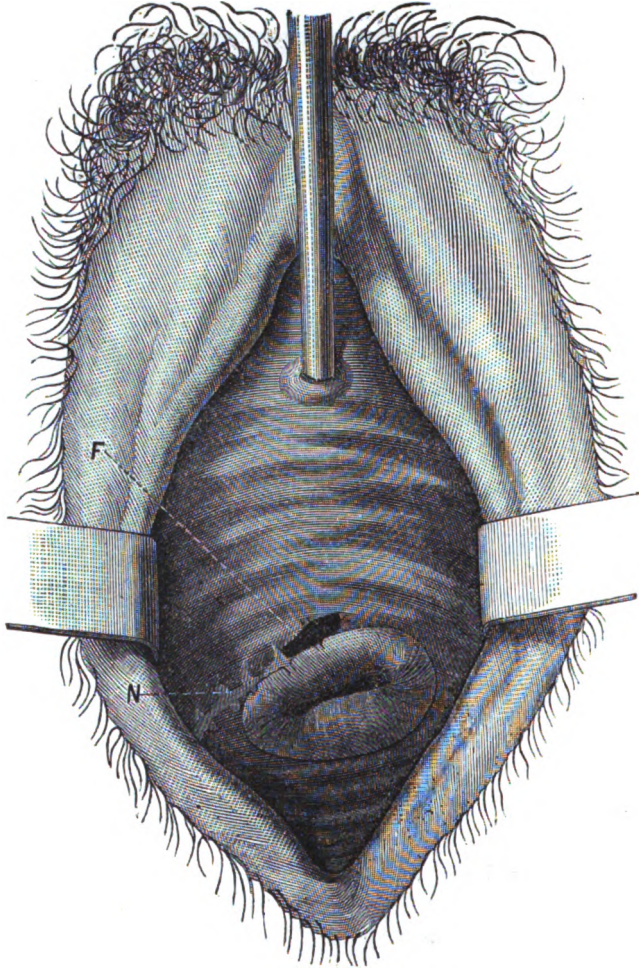
F, fistula in the lateral vault of the vagina. The fistula is by mistake represented in the right vault of the vagina. It lay in the left. The band-shaped contraction anterior to the fistula could not be represented in the drawing.

Figure 11.



F A, pered fistula, or appearance of the same after excision.

Figure 12.



N, cicatrix; F, fistula.



The defect could only be covered by drawing the uterus forward and letting it partly supply the fistular loss. By some traction with a *Musseux's* forceps I could so draw forward the anterior lip of the uterus as to bring it in contact with the urethra. I pared the edges (behind the anterior lip of the os), which was done without difficulty save in the posterior angles, and united them with eleven sutures. The line of union was of a semi-lunar shape, with its strong convexity towards the front (see figure 2 of the plates). During the first day only was catheterization necessary; after the second day the patient urinated voluntarily. On account of the considerable wounding of the bladder and traction on the united parts, spasms of the bladder ensued, which diminished only on the fourth day; there was also reiterated vomiting during the first two days. Sutures were taken out from the fifth to the eighth days. The defect proved cured, excepting a small fistula from the size of a lentil to that of a pea at the point of union between the anterior lip of the uterus and the urethra (see figure 2). This small fistula was afterwards operated on by Dr. Bozeman.

CASE II\* (figure 3 of the plates).—I had six years ago completed an almost total obliteration of the vagina in a woman fifty-six years of age, which had originated subsequent to severe labor, by closing a transverse opening of one centimetre in length situated in the atresia. A cure with total continence was effected. At first operation a pyelitis calculosa suppurativa existed, which had constantly increased up to the present time. The urine was constantly mixed with pus, frequently showed alkaline reëction, and calculi had formed, of which at various times small fragments passed the urethra. Finally, six months before the reception of the patient into the hospital, a stone had sloughed through that part of the bladder and urethra situated before the atresia of the vagina, causing a fistula the size of a cherry-stone. The patient was emaciated on account of fever, loss of appetite, and pains in the bladder, sleeplessness, etc. Her wish for an operation was urgent, in order to be rid of the torture caused by the involuntary flow of urine. I was thus induced to operate. I made a longitudinal excision of the fistula,

\* Dr. Kœberlé, of Strasburg, assisted in this operation.

which extended forward to  $1\frac{1}{2}$  centimetre from the orifice of the urethra, and backwards vertically through the cicatrix of the atresia of the vagina, and united the edges by means of six sutures, of which three were superficial and three deep. Fever increased after the operation, chills appeared, and the patient died after six days. The united parts had become separated. The post-mortem proved the left kidney to be changed to a pouch filled with pus, as also the greater part of the right kidney destroyed by suppurative pyelitis. A calculus was found in the left ureter.

CASE III (figure 4 of plates).—Fistula in the upper third of the urethra about two centimetres from its orifice. The fistula represents a transverse slit of two centimetres in length and one-fourth of a centimetre in breadth. The vagina is so narrow at the seat of the fistula that scarcely the points of two fingers can be passed. The opening lies in a deep groove of the urethro-vesico-vaginal septum, which was retracted towards the arcus pubis, and very firmly attached to it. The edges of the fistula were much attenuated (see figure 4). The cicatricial atresia of the vagina extended upwards (longitudinally) more than one-half of a centimetre.\*

Previous to operating, I intended to split the annular atresia of the vagina, and then, as I always had done, proceed to the operation at once. B., however, thought the result would be unsafe unless a gradual dilatation of the vagina had preceded, and offered to bring this about in two weeks. He cut through the cicatricial bands with the knife and introduced soft and hard rubber tents. The patient suffered the most excruciating pains in the vagina, the abdomen, and the region of the kidneys, and very high fever with chills set in, so that we thought her health seriously endangered. After six days of such treatment, the tamponade was abandoned. On recovery of the patient, the vaginal atresia remained nearly as considerable as before the tamponade. At the same time we ascertained, that at the proximity of the anterior lip of the mouth of the womb a new (very

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\* This patient had previously undergone the operation of colpocleisis by a German colleague. I reopened the obliteration in order to close up the fistula itself, which seemed not over-difficult to do.

small) fistula existed.\* A second trial of the gradual dilatation I considered improper, and according to my experience not necessary. Before the operation I split the cicatrices, which caused the atresia, with a probe-pointed knife. They were cut in various places, and more especially those bands which bound both angles of the fistula to the bone. Thereupon I pared the inturned edges of the fistula very broadly, and united them by means of five sutures. On the fifth and seventh days the sutures were removed. The fistula was closed, with the exception of a very small slit in the middle of the cicatrix. I predicted that this little fistula, most likely, would spontaneously heal, because it was enclosed between very deep margins. On the tenth day the patient was taken sick with a catarrh of the bladder, accompanied by strong fever and pains in the kidneys, lasting a fortnight. Four weeks afterwards, when these symptoms had disappeared, an exploration proved that the small opening was closed, and thereby the whole fistula totally cured. The following summer I operated on the small fistula near the mouth of the uterus, which had appeared during the gradual dilatation, and achieved a cure by two sutures.

CASE IV (figures 5 and 6 of the plates).—The patient, aged twenty-six, suffered from a transverse fistula in the upper third of the urethra, at the juncture of the urethra to the vesico-vaginal septum, complicated with very considerable atresia of the vagina. The fistula was located in a deep retraction of the urethro and vesico-vaginal septum—i. e.,  $2\frac{1}{2}$  centimetres further from the urethral orifice than in the former case. The vagina was contracted and laterally attached to the bone at the location of the fistula; one-fourth of a centimetre in its rear is a tough cicatricial mass, which reaches up to the os uteri, and almost completely shuts up the vagina. A probe can merely pass through a narrow canal on the right up to the region of the womb. The extent of the fistula in a transverse direction amounts to about two centimetres; its length is only about half a

\* This little fistula was very likely not caused by ulceration in consequence of the tamponade, much rather had the tampon severed a small cicatrix pre-existing at this point. There was indeed no sign of ulceration visible.



centimetre; its edges are adherent to the arcus pubis, and thereby difficult to expose (demonstrate). The angles of the fistula were deeply hidden in callous tissue (see figure 5). In this patient also I allowed Dr. B. to make an attempt to enlarge the vagina. After a bloody division nearly up to the os uteri the tamponade was daily carried on, but the result was also negative. The pain became unbearable, and fever set in on the second day, which, by degrees, reached such a height, that towards the fifth day the tampons were abandoned. When the fever had abated, the atresial masses proved nearly as extensive as before. I therefore resolved to operate without previously resorting to gradual dilatation of the vagina. By means of several deep incisions to the rear and laterally, the cicatrices were divided in the region of the fistula, so that the instruments of dilatation could be applied and the attenuated margins of the fistula brought into sight. I now pared the edges and the deep groove between the urethro and vesico-vaginal septum in broad extent. The paring extended mainly into the mucous membrane of the vagina; only close to the fistula the whole thickness of the septum was pared away. The union was brought about by means of six sutures, their application especially in the left corner being extremely difficult. Immediately after the patient had been again placed in bed there was involuntary emission of urine, nor did this involuntary loss of urine cease thereafter. From the fifth to the seventh day the sutures were taken away, and we saw the urine ooze out at the left angle. An opening could not be detected, because we did not dare to draw asunder the fold in which the fistula was located. Only towards the end of the fourth week we found a very small opening at the left end of the otherwise entirely-healed fistula. It was seen to lay outside of the reach of the last suture mark. It had evidently never been closed up. In this way the involuntary loss of urine immediately after the patient's return to bed was readily accounted for. Unfortunately I had neglected to test the bladder as to its continence, while the patient was yet on the operating-table, by injecting water. Had I done so, the small opening would have been found and subsequently shut up (figure 6). In the course of the summer of 1875, I operated

twice more on that small remaining fistula before it could be brought to a closure. It lay very deep in a mass of callous tissue, which was firmly attached to the bone. In the first operation I had pared the edges of the groove, and thereby made the fresh edges of the fistula very broad, and had applied two very deep sutures, and confidently hoped that even the remotest part close to the bone was included in the loops of the sutures, although the bone was a great hindrance to their application. This time also I omitted to make the "continence test" by injecting water after the operation, having no idea that the cure would fail. But as soon as the patient had been brought to bed, I was again most unpleasantly surprised by the involuntary flow of urine, which had taken place after the *con-cours* operation. The fistula had again not been closed by the suture. At the next operation I separated the whole cicatrized mass in which the fistula lay, from the bone down to the depth of three-fourths to one centimetre, and had all the parts drawn over to the right side by means of sharp hooks. I could now operate exactly, and succeeded in closing up the fistula. Evidently I might have attained this end at the first operation had I not neglected to try the "continence test." Had I then re-opened the fistula, paring and sewing up the left angle, it would have been much easier, and might perhaps have been done without cutting the callous masses from the bone.

Dr. Bozeman executed the following operations:

CASE I (figure 7).—In a patient aged thirty years a fistula was situated in the anterior vault of the vagina; it measured  $1\frac{1}{2}$  and 2 centimetres in diameter, and freely allowed the index finger to pass. Its posterior edge was formed by the anterior lip of the os uteri. It was located in the middle of the vagina, and was comparatively easy of access, because the vagina could readily be dilated (see figure 7). After the fistula had been exposed, in knee-elbow position, Bozeman\* pared the anterior margin with the knife, the posterior with the scissors, increas-

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\* Bozeman thinks the retention of a wire-loop totally harmless. Nevertheless, I had to crush a calculus of the bladder, the nucleus of which was formed by a loop of wire. The loop had been left after an operation for vesico-vaginal fistula one year before, and had migrated into the bladder.

ing its size considerably, and making very broad wounds. These were united by five sutures transversely to the direction of the vagina, the anterior lip being united with the vesico-vaginal septum. On the eighth day the sutures were removed. One loop of wire was so retracted into the tissues that, after the pierced shot which contains the ends of the wire fastened within itself was cut off, it could not be extracted. The fistula is entirely cured; one piece of wire is yet retained.

CASE II (figures 2, 8, and 9).—Bozeman operated on the small fistula which had remained after my first operation (see figure 2). It was situated in the line of union between the anterior lip of the uterus and the urethro-vaginal septum, which latter was only  $2\frac{1}{2}$  centimetres in length. The anterior edge of the fistula was pared with a knife, and the posterior margin and the angles with the scissors. Three sutures closed up the fistula, two of which were to the right and one to the left side of the urethra. At this operation Mr. Kœberlé, of Strasburg, was present; it lasted thirty-five minutes from the time the patient was chloroformed and strapped (buckled literally) on the chair. The edges had been pared off obliquely; at the os uteri the pared surface was very broad, about 1 and  $1\frac{1}{4}$  centimetre; and even the lateral parts of the anterior edge of the fistula were made one centimetre. At the urethra itself (the middle part) the paring was one-fourth of a centimetre in width. The fistula was considerably enlarged; of the urethra there remained but  $1\frac{1}{2}$  centimetre. The paring had been done in perfectly normal tissue, and a cure was therefore to be expected. During the first days the patient lost no urine. On the fourth and fifth days spasms of the bladder set in; the urine, which had heretofore been rather clear, now became turbid and mixed with mucus. On the seventh day, when Bozeman removed his suture apparatus, urine flowed from the right angle of the fistula; and at the exploration two days later the fistula proved reopened in its whole extent, and was so much increased in size that the finger could easily pass through (figure 8).

The future fate of this patient was the following: The very considerable increase in the size of the defect, and the fact that the urethra is but  $1\frac{1}{2}$  centimetre in length, made the prognosis

for a second operation much worse than it had been for the former, and even after a successful operation as to closing the fistula, incontinence was with certainty to be expected. The chances would now have become especially unfavorable if, on paring, B's. plan of taking away large quantities of tissue was adopted. Nevertheless, B. insisted that he could not only cure the fistula, but also establish continence. I therefore requested him to perform the operation once more. But Dr. B., who just then was compelled to depart, promised that he would return in the summer and operate on this fistula. I therefore kept the patient in the clinique (Academic Hospital) the whole of the summer and fall up to October, 1875. B. had been invited through one of his acquaintances living here, and I invited him twice myself in October for the very purpose of carrying out this same operation. Unluckily, circumstances did not permit him to come here. I had, therefore, to perform the operation myself. I reopened the cicatrix of the first large defect very extensively into the lateral parts of the vagina, so as to make the uterus more movable; I also pared the edges very closely in their totality, drew the uterus downwards and forwards, and fixed it to the anterior pared edge with six sutures. The urethra itself being united to the anterior lip by means of one suture through its centre, while the other very deep sutures united vagina and uterus, and held the latter down towards the introitus-vaginæ. When the sutures were removed, five or six days afterwards, but one-half of the fistula proved cured. No doubt very considerable traction was the cause of this very poor success.

In the following operation I again separated the united parts of the fistula, cutting deep into the lateral parts of the vagina, as I had done in the previous one. The anterior edge of the fistula was pared sparingly in a very superficial oblique direction, so that the urethro-vaginal septum lost but two minims of its substance. Union was completed by means of eight sutures, of which two very thin ones united the urethra to the os uteri. At this time I was not satisfied to counteract the tension by means of deep-drawing sutures applied at the sides of the urethra, but I also separated the urethra from the arcus pubis

by means of the *vestibular section*, and split the commissures of the os uteri, after Jobert, to the extent of  $1\frac{1}{2}$  centimetre, in order to give mobility to the anterior lip. Perfect union was achieved throughout the extent of the fistula; but continence existed only while the patient lay on her back. When walking or standing longer than one-fourth or one-half an hour, she lost urine. The urethra was at most  $1\frac{1}{2}$  centimetre in length (see figure 9).

CASE III (figures 10, 11, and 12).—In consequence of heavy labor a woman, thirty-eight years of age, had acquired a fistula in the left vault of the vagina, which was no larger than to admit the nail-phalanx of the index finger. It represented a transverse slit  $1\frac{1}{2}$  centimetre in length, and half a centimetre in width (figure 10). Anterior to the fistula the vagina was rather narrowed by a thin cicatricial band. The edges seemed to be attached to the bone. I attempted to expose (bring in sight) the fistula by means of a gutter-shaped speculum while the patient was in the coccygo-dorsal position, when I found that this could only be achieved in a very unsatisfactory manner. The fistula seemed to me very hard of access, and I thought the peritoneum might easily be injured by the paring or sewing. I remarked at the time that under the influence of chloroform in very high coccygo-dorsal position, and by dividing the impeding cicatricial bands, access to the fistula must be strived at; that, however, under certain circumstances—i. e., supposing the fistula could not be properly exposed, no attempt at closing it should be made. But, as I have done in one case,\* an obliteration of that part of the vault of the vagina including the os uteri in which the fistula was situated was indicated. In this manner, at all events, an injury of the peritoneum would be prevented. However, I abstained from further attempts at exposing the fistula, but left the patient to Dr. B. for operation, in order to see how he would achieve access to the fistula in the knee-elbow position. Dr. B. preparatorily, by means of incisions and subsequent tampons, dilated the cicatricial bands causing the stenosis. The lesions caused by the

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\* See minor communications of the Surgical Clinique of the Rostock Hospital, second division.

incisions were very small, and the band was readily stretched on inserting the tampon. After ten days the operation was performed, and I saw that the fistula could be well exposed in the knee-elbow position with Dr. B.'s speculum. But, nevertheless, access for the instruments was yet very difficult. The paring lasted more than two hours, and the fistula had to be extraordinarily enlarged, in order to be able to pare left angle (figure 11). The adaptation of the suture was attended with great difficulties, and it took two hours and one-half to apply five sutures. The whole operation, therefore, lasted four and one-half hours. During the after-treatment large doses of opium were administered, and a catheter en permanence was used. On the eighth day Dr. B. himself took out the sutures. The original fistula was closed, but right in front of the anterior lip of the womb an opening remained, through which (three weeks after the operation), when the patient left the hospital, the nail-phalanx of the index finger could be passed, and which therefore was as large as the original fistula. The state of the patient was in so far improved that the remaining fistula was far easier of access, and consequently more amenable to a cure (figure 12). On account of the exhausting and the equally weakening after-treatment, the patient felt so much worn out then that she would not make up her mind to another operation. Up to the present time she has not reappeared in Heidelberg.

CRITICAL EXAMINATION OF THE RESULTS OF THE OPERATIONS  
DESCRIBED.

If we wish to get at a correct opinion as to which of the two methods of operation was the most successful, we begin by eliminating my second case. The patient was suffering from pyelitis suppurativa calculosa at the time of the operation, and died on account of it. The post-mortem showed that the substance of both kidneys was almost entirely destroyed, and one of the ureters contained a stone. The patient would have died under these circumstances, which, before the operation, could not be diagnosed as to their full extent under any mode of operation, and the fistula would also have reopened, as Dr. B. readily conceded.

Thus three cases are left for comparison on each side. *My results* were the following: In the first case a small fistula, from the size of a lentil to a pea, about the twenty-fifth part of the line of union had remained open. Three or four weeks after the operation of the second patient (Case III.), a little fistula, which had remained after the operation, spontaneously closed up, and thereby a cure was effected. In the third patient (Case IV.) the fistula healed, with the exception of a small spot in the left angle, which lay outside of the suture.

Bozeman achieved a perfect cure in his first case. In his second the fistula re-opened throughout its entire length, and the patient became incurable. In his third patient four-fifths of the line of union healed.

*My results*, therefore, are absolutely, as well as relatively, better than Dr. B.'s, as we will see directly. For even if we do not ascribe the small fistula which remained in my fourth case to my negligence (as it ought to be), but ascribe it to the method itself, this would only have amounted to the twelfth or fifteenth part of the line of union. Under this acceptation there would, in my cases, be openings of one-twenty-fifth and one-twelfth to one-fifteenth of the line of union standing against a total failure and an opening of one-fifth of the line of union.

In order to attain a correct idea about the relative worth of the two methods, considering the small number of cases, their equalities also must be considered—i. e., we must see what kind of difficulties were opposed to the exact execution of each single operation, and after the completion of the operation, what difficulties were opposed to the healing process.

The execution of the operation can be impeded by such considerable difficulties in the exposure of the fistula that but an incomplete paring and union of the edges is possible. The large defect in my first case presented greater difficulties only in its remotest angles, which prolonged the operation, but did not prevent an exact execution of the same. In the third case cicatricial bands impeded the operation; these being divided, the impediment vanished. In my fourth case, also, paring and suture were very difficult, owing to the deep location of the fistula in a fold which was closely attached to the bone, which

circumstance caused a small part in the left angle, not included in the suture, to remain open. But as the subsequent occlusion of the little fistula proved, I might have arrived at complete access.

In Dr. B.'s cases the two first fistulæ were very easy of access, whereas the last was very difficult to get at. It lay in the left vaginal vault and so high up that I, on hasty examination, thought it possible that, from insufficient accessibility (and the proximity of the peritoneum), we would be compelled to perform obliteration of the vault of the vagina. But Bozeman, by gradual dilatation of the vagina and a very tedious operation of four and a half hours' duration, succeeded in exactly paring and sewing the fistula. Therefore, accessibility was so far established in the six cases that the main conditions of healing a fistula, *paring and suture*, could be executed to the fullest satisfaction of the operators.

Impediments for the healing of the pared edges are the following:

1. *Considerable Size of the Defect.*—In my first case the defect extended over the whole of the vesico-vaginal septum as far as the lateral vaults, and even into the urethro-vaginal septum. Of the latter, only  $2\frac{1}{4}$  centimetres remained. The uterus could, indeed, be drawn down so far that the anterior lip of the os uteri touched the remnant of the urethra, yet the tension was considerable and the line of union very extensive. My other fistulæ were transverse slits of moderate size.

In Dr. B.'s cases the size of the fistulæ could not present any difficulty. The largest was of the moderate dimensions of half a centimetre in length and two centimetres in width (see his first case). Of the other two, one was the size of a lintel or a pea; the other just admitted the nail-phalanx of the index finger. (Cases II. and III.)

2. *Implication of the Urethra.*—Fistulæ which involve the urethra are more difficult to cure than fistulæ which are situated higher up, even if the latter present no difficulties in making them accessible. The septum urethro-vaginal is by far thinner than the septum vesico-vaginal, and we must economize when paring in order to preserve continence; whereas this motive does



not exist in fistulæ situated higher than the urethra. The larger the loss of substance in the urethra is, the more difficult is the cure, because the thickness of the muscular coat, and consequently the thickness of the whole septum, decreases from the orificium-vesicale to the orificium-externum, and the danger of incontinence increases at the same ratio. If the urethro-vaginal septum is three centimetres in length, which nearly or altogether equals its normal length, the prognosis is comparatively favorable; for this septum is but very little thinner than the vesico-vaginal septum, and broad strips of substance can be pared off for the purpose of making good edges without running the risk of incontinence. In case of a defect extending to  $2\frac{1}{2}$  centimetres from the orificium-externum, the danger arises that on moderately extensive paring (about one-half to three-fourths of a centimetre) a cure will not take place, owing to the thinness of the edges, or that if it has taken place, continence is impaired. Thus it is that, generally speaking, fistulæ in the urethro-vaginal septum, or such as extend into the same, are much more difficult to cure than those further back (higher) in the vagina.

In all of my cases the urethra was implicated. In the first,  $2\frac{1}{2}$  of a centimetre were left; in the third and fourth the fistulæ were located in deep transverse folds of the vagina, which were but 2 to  $2\frac{1}{2}$  centimetres distant from the orifice of the urethra.

In Dr. B.'s cases the urethra was defective but once (see his second case). It measured  $2\frac{1}{2}$  centimetres in length.

3. *Cicatricial Contractions and Adhesions of the Vagina Immediately at or Close to the Fistula Edges.*—In two of my cases (figures 3 and 4) these impediments existed; for in the third case there was a band-shaped contraction one-half a centimetre in width at the seat of the fistula. In Case IV. the vagina was narrowed to a small canal from the upper margin of the fistula to the mouth of the womb. If such masses of callous tissue are divided in order to make the fistula accessible, or to make its edges movable by means of the knife or the scissors, it is possible that on account of the reünion of these incisions a traction is brought to bear on the fistula which is capable of reöpening it as late as the sixth or seventh day. This is especially to be apprehended if very great tension is to be overcome

during the act of knotting the sutures, and I myself witnessed this re-opening in a former case. Bozeman thought a cure very difficult in my two cases without preliminary treatment, and attempted to prepare the parts for my operations by means of gradual dilatation subsequent to dividing the contractions and cicatrices. When these attempts had proved fruitless, I undertook the operation, trusting my paring and sutures to be warrants enough against these unpropitious circumstances, the more so as the edges could be united without traction. I divided the cicatricial contractions and adhesions as far as they impeded the operation, united the pared edges, and achieved a cure.

Bozeman found only in his third case a narrow band-shaped contraction of the vagina, which he gradually overcome by dilatation, so that it offered no difficulty to the union of the edges.

4. *Proximity of the Ureter or Opening of it into the Fistula.*

—This circumstance seems to me no obstacle to a cure; but I here quote it because Dr. B. is of different opinion, and in his third case ascribes the remaining opening to this cause, supposing it to have originated from the ureter being caught in the suture (see below my remarks to Dr. B., article in the "New York Medical Record," July 25th). But even admitting this to be an impediment in Dr. B.'s case above described, it can not possibly have been the cause of the remaining fistula; for, as figure 12 shows, it is situated immediately in front of the mouth of the womb, and at least one centimetre distant from the ureter. The orifices of ureters in the bladder correspond to two points in the vagina about one centimetre each side of the os uteri and about one-fourth of a centimetre in front of it; therefore the ureter could more likely have been caught in the end of the suture which healed up than in that which remained open. However, as I have shown in my paper of 1868,\* proximity of the ureter seems to offer no bad auspices for the cure of a fistula; for I have operated on quite a series of fistulæ which were located at

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\* Communications from the Rostock Surgical Clinique, Second Part. Leipzig, Hirschfeld.

or reached the point where the ureters are found; but I have neither observed a symptom which, with certainty, indicated occlusion of the ureter, nor have I very frequently seen openings appear at the points named. In these cases the ureter had either not been caught in the suture, or if caught, had not been closed; or thirdly, the thread had cut through the uretero-vesical wall so quickly as not to cause any protracted retention of urine. It is most likely that the ureter is either not caught at all, or only one of its walls, by the suture in these (mostly small) fistulæ, because it lies immediately under the mucous lining of the bladder, which, in small fistulæ, is rarely taken into the loop of thread. Where the ureter *evidently* opened into the edge of the fistula, I have taken the precaution to *remove its vesical orifice to a spot distant from the edge*, so that it could not be caught in the suture. If the ureter had not retracted from the edge of the fistula, I would have shortened it with the scissors and removed its cover, formed by the mucous lining of the bladder, or only cut out a part of the uretero-vesical parietes, so that the orifice could not be closed up by the suture.\*

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\* For the operation of the very rare uretero-vaginal fistulæ a similar method of treatment might be applicable. Formerly, I had always spoken in favor of (see my article in Scanzoni's Beiträgen, vol. vi., 1860) an indirect cure for the treatment of the incontinentia urinæ, after I had repeatedly tried a direct one without success. These attempts had failed because I had cut the orifice of the ureter into the closed bladder too small, so that I was not successful in establishing a permanent opening of the ureter into the bladder. By means of the above-mentioned methods of operative treatment for vesico-uretero-vaginal fistulæ, and now since the bladder has been made accessible by means of the bloodless dilatation of the urethra, a direct treatment of uretero-vaginal fistulæ seems to me to offer a better show than heretofore. In my gynecological course I have been teaching for several years, that at the place of the fistula the wall of the bladder is to be cut through, thereupon a probe to be inserted into the ureter from this opening into the bladder, and using it as a director, the uretero-vesical parietes are to be split upon it to the extent of from 1 to 1½ centimetres upwards towards the kidney. The after-treatment would consist in daily inserting a thick probe into the slit until cicatrization had taken place. Afterwards, the vesical fistula which now lies distant from the new orifice of the ureter is to be pared and united in the direction of its longest diameter (which in both of my cases happened to be the transverse). It might not be bad to pare the parts of the vault of the vagina adjoining the edges of the fistula and use these as material for occlusion. This proposition seems to me to offer a safer way to attain the purpose than a late pro-

5 and 6. Finally, I have achieved my results under two circumstances, which are, in the eyes of Dr. B. and many others, especially American colleagues, considered great obstacles to a cure (but I confess not in mine), and therefore must considerably increase the value of my results in their estimation; for I achieved my cures not with metallic but with silk threads, and applied no catheter en permanence, but *allowed the patients to urinate at their free will*. I have employed sutures of Chinese (a very tightly-twisted material), and of this for most of the sutures, not the finest kind, but such of No. 1, which is thicker than a double thread of No. 0, that I formerly frequently used, but have now abandoned on account of its weakness, and I now only employ it in case of very thin edges for the purpose of auxiliary superficial sutures.\* The sutures were fastened simply by knotting. Concerning the after-treatment, I never take the slightest precautionary measures to keep the urine away from the wound; nor against tearing while the bladder is filling or discharging. The patients were allowed to urinate when they pleased, and Dr. Bozeman saw them walk into the operating hall and climb on the table, four or five days after the operation, in order to have the threads taken out.

Dr. Bozeman used the wire suture, which he fastened on a pierced plate with pierced shot (his so-called suture apparatus) in his cases. He claimed for it not only the advantages of metallic sutures, but also a better fastening of the sutures, which, in my method, consists in simple knotting of silk threads (which is equal to Sims' twisting-of-wire suture).

Dr. Bozeman applied an elastic catheter-à-demeure to the bladder, which he rinsed out several times a day, and gave

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posal made by Dr. Loudau (Archiv. für Gynæcologie, ix., 3). I will speak about these subjects more extensively in another place before long.

*Addition to the American Edition by the Author.*—Uretero-uterine fistulae, for which heretofore neither an operation has been performed nor a proposal for its performance (see Scanzoni's Beiträgen, vi., Würzburg, 1860) offered to the profession, may probably be cured by splitting the portio-vaginalis up to and even above the insertion of the vaginal vault, as Jobert has first done for vesico-uterine fistula. In this way the orifice of the fistula in the canalis cervicalis may be exposed and cured either by bloody suture or cauterization.

\* Explanatory note of the Translator.

large doses of opium. He puts such value on this after-treatment that he intimates (in his article in the "New York Medical Record"), that the result in his second case was so unfavorable because he had not been able to carry out the after-treatment exactly to his wishes. Actually he visited the patients from three to four times a day himself, and my assistants, on his wish, paid attention to them at night. As stated above in the history of Case II. of Dr. B., I afterwards closed up that fistula under circumstances much less favorable, and *without any after-treatment* whatever. \* \* \* \* \*

The above can be condensed in the following words :

To the exact execution of the operation, in all six cases, only B.'s third offered serious difficulties as far as access is concerned, and these were eventually overcome.

Further, we have seen that the operation being completed, in my cases, with the exception of Case I, where a little fistula remained, union of the edges took place, notwithstanding many real difficulties, or such as were considered so by Bozeman. On the other hand, B. had only one case (number 2) in which, by implication of the urethra in the defect, the cure was difficult. In this case reöpening of the edges ensued, which rendered the case incurable.

Therefore it remains to inquire :

(1). Whether access to the fistula in B.'s third case could have been reached by my method also, or whether his method of exposing fistulæ has an advantage over my coccygo-dorsal position.

(2). Whether my paring and suture, to which the favorable results can only be ascribed, are better than the same acts in B.'s method, and whether the very unfortunate result in B.'s second case was merely accidental or must be ascribed to the method.

Concerning the first question, I indeed thought that in B.'s first operation the exposure of the fistula in the knee-elbow position and through his speculum succeeded better than in the coccygo-dorsal position and by my instruments. After B.'s exposure the fistula could easily be seen during the whole of the operation, and if not the operating itself, yet the effect of every

cut and of each suture could be followed (controlled).\* In this first case the paring of the fistula was completed with one single onset of the scissors and the knife, very substantial edges in healthy tissue were formed, and the whole operation completed in one-half hour, notwithstanding the very complicated suture. The result of the operation was a complete cure. Remarkable in the performance of this operation, to me, was the extremely broad excision (paring) of the edges, amounting to one centimetre in width. At the same time I found it injudicious that the larger part of the fistula was pared with the scissors, yet in the face of the result this scruple had to vanish. The whole operation impressed me favorably, though the fistula was, comparatively speaking, easy to cure. I confessed to myself, that if in difficult cases operations could be performed with the same certainty, celerity and equally good results, B.'s method deserved to be preferred to my own, especially in fistulæ situated high up in the vagina, which can not be dislocated towards the introitus-vaginæ. I thought the method might be advantageous, because these cases sometimes offer greater difficulties to the operation with the knife in the coccygo-dorsal position, but the results of the two following operations convinced me of my error :

In the second, executed in presence of our colleague Kœberlé,† the fistula was only situated  $2\frac{1}{2}$  centimetres from the orifice of the urethra. After the patient was fastened in the knee-elbow position and chloroformed, the operation was carried out with great rapidity and dexterity (thirty-five minutes); all the spectators as well as myself admired Dr. B.'s skill (virtuosoship) (?). But here also I was struck by Dr. B.'s extensive excision of the edges, and that, as in the first operation, he used the scissors in preference to the knife. The anterior margin of the fistula was situated in the urethra, which only measured  $2\frac{1}{2}$  centimetres in

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\* During the execution of both acts the hands of the operator darken the field of operation.

† During this operation it is likely that I made the remark which Dr. B. quotes in his article in the New York Medical Record (see "remarks to this article" below), referring thereby to B.'s first case, for Dr. Kœberlé was not in Heidelberg at a later period.

length, so that a very slight paring was indicated in order that continence of urine be retained; nevertheless, Dr. B. cut off about one centimetre of the edges, so that but  $1\frac{1}{2}$  centimetre of the urethra remained, and thereby risked incontinence in case of a failure. But the edges fitted closely upon one another; they were situated in perfectly healthy substance, and could be easily united in spite of the tension on them. If a cure with continence had followed, nothing could have been said against this operation either. But the whole fistula reopened and the patient became incurable.

In the third case the fistula was very difficult of access, being situated in the left vaginal vault. After the exploration in the coccygo-dorsal position, in which I did not make use of any auxiliary instruments for this purpose, excepting Sims' duck-bill speculum, not even using chloroform, its edges seemed to be attached to the bone; and as above remarked, I expressed the opinion that in this case, on account of the inaccessibility of the edges and of the proximity of the peritoneum, an oblique obliteration of the left vaginal vault might be indicated. Dr. Bozeman cut a cicatricial band which narrowed the vagina exterior to fistula, gradually enlarged the same by tamponade, and ten days afterwards carried out the operation. The fistula was clearly brought to sight by means of the speculum, and I was able to convince myself that my first thought after superficial exploration, that the fistula was attached to the bone with the greater part of its edges, was wrong. On the contrary, only the extreme corner of it was adherent, and therefore much easier of access than I believed. I thought that in this case also the operation would be carried out as quickly as in the former cases; but the fistula was, in spite of easy exposure to the eye, so difficult of access to the instruments that it took Dr. B. four and a half hours, a time now-a-days unheard of, to complete the operation, though the defect was small. In order to pare the edges exactly, he had to so enlarge the fistula that its inner angle extended past the left of the anterior lip of the uterus (see figure 12). At the end of the operation the edges were very broad and situated in exceedingly sound substance, and during the application of the suture apparatus no tension was felt. In

this case I was likewise struck by the extensive paring in so immediate proximity to the peritoneum, and the broad excisions extending to parts  $2\frac{1}{2}$  to 3 centimetres from the fistula. Therefore I feared a peritonitis, as I remarked to Dr. B., without ever doubting that a union would properly take place. Yet in this case neglecting the proximity of the peritoneum was followed by no evil consequences. Peritonitis did not make its appearance; yet, on the other hand, the fistula did not heal in its totality, as I had predicted, but an opening remained before the os uteri, through which the nail-phalanx of the index finger could be introduced.

After these operations I understood that my former supposition, namely, that accessibility in the knee-elbow position and by means of Dr. B.'s speculum, could better be obtained than by the coccygo-dorsal position and my instruments, was an illusion. True it is that, in Dr. B.'s method throughout the operation, the fistula can well be seen, but the instruments are so difficult to handle that Dr. B. must in all cases, even where the fistulæ are easy to expose (Case II), make use of the scissors, and always excise large portions of marginal substance while paring. These disadvantages, which will be treated of more thoroughly below, are not inherent to my method, and I therefore hold the opinion, that in general it is preferable to Bozeman's.

In answering the question above proposed, whether in Dr. B.'s third case the fistula, which was very difficult of access, could have been exposed and approached by my method, I was impressed during the operation that with such protracted efforts as were necessary for Dr. B. to perform paring and union, I could also have succeeded in the coccygo-dorsal position in paring and sewing the edges, and even paring with the knife, though I had heretofore doubted the possibility. By division of the impeding cicatricial band and dilatation of the vagina under the influence of chloroform, access would very probably have been reached; yet even then it would have remained doubtful with me if obliteration of the left vaginal vault, in order to avoid injuring the peritoneum, were not preferable. I would have only united the edges in case I could have perfectly controlled each cut of the knife and carried out continued nar-



row paring, as indeed by such proceeding lesion to the peritoneum is much less possible than under Dr. B.'s broad excision. True, the peritoneum was not hurt in this case, either because the lateral cul-de-sac of Douglas was broadly obliterated or because it did not reach the field of operation on account of individual peculiarity; but that danger exists, and that it is advisable to look out for it, can not well be denied. Dr. B. himself has seen in his fourth case, in Vienna, during his preliminary operation, that a prolapsus of the fallopian tube occurred through a fold of the peritoneum opened by himself, though there were callous cicatricial contractions of the vagina in its immediate proximity, which made it probable that similar ones existed in Douglas' sac.

In these fistulas situated in the lateral vault, and so very difficult of access, happily of rare occurrence, it is left optional with the operator whether he will, as Dr. Bozeman did, close up the fistula or perform obliteration of the vault, including the os uteri. In the first case, the patient is exposed to the danger of losing her life; in the second case she remains sterile, but the operation is harmless.\* Were it possible in these cases

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\* The oblique or transverse obliteration of the vaginal vault can be performed without fear of lesion to the peritoneum. True, Douglas' cul-de-sac extends over the posterior side of the vault, but it is separated from the latter by the thick mucous membrane of the vagina and a rather strong stratum of connective tissue. On superficial paring and employing sutures which do not pierce or perfectly embrace the whole wall of the vagina, the peritoneum can not be injured, provided the mucous membrane is not attenuated by a cicatrizing process and the peritoneum thereby attached to it. These latter are rather to be expected close to the fistula than lower down, where occlusion is to be performed. I have carried out the obliteration of both vaults together immediately in front of the os uteri in two cases, and in one case oblique obliteration, but have never observed peritonitis, not even a peritoneal irritation. How little a lesion of the peritoneum after superficial paring is to be feared, becomes obvious also by the results of another operation, viz., colporaphia posterior, which I have invented for the cure of prolapsus uteri (see my Mittheilungen aus der Chirurg. Klinik in Rostock"). Here the upper part of the pared surfaces is situated right over Douglas' cul-de-sac, only separated from the same by the mucous membrane and a layer of connective tissue. But neither myself nor any other operator has seen a lesion of the peritoneum, though the operation has been performed in more than one hundred cases.

to obliterate the vaginal vault without including the os uteri, then the operation would avoid the unfavorable points of either of them. I have never performed this obliteration myself, but I do not believe that its execution would meet with very great difficulties.

We now approach the second question: Why were the results of my paring and suture absolutely and relatively far better than Dr. B.'s, and are they to be ascribed to chance only, or to the method itself?

To me they seem to rest on the method.

Dr. B.'s paring is done in the following way: He takes hold of the anterior edge of the fistula with a tenaculum, pierces the same with a knife, and cuts in a transversal direction towards both angles; thereupon he takes hold of the loosened edge with a tenaculum and exerts traction on it in such a manner as to give the fistula a more vertical (antero-posterior) direction. Now he excises the posterior edge of the fistula from the right angle to the left with uninterrupted *cuts with the scissors*. The marginal parts were cut away so broadly in his first two cases that no secondary paring needed to be resorted to. In the third case, in which the fistula was very unfavorably situated, Dr. B. cut away still larger pieces, in order to be able to get at the extreme angle of the original defect. The edges were almost exclusively pared by the scissors in this case (figure 11). Dr. B. practiced broad excision even in those cases in which the fistula extended into the urethra, or was situated close to the peritoneum. I, on the contrary, after dilatation of the vagina, attempt to dislocate the fistula nearer to the introitus vaginæ (by means of sharp, single and double tenacula, and by means of loops carried through the lips of the os uteri); then I take hold of the edges of the fistula, which, in the coccygo-dorsal position, lies directly in front of me, by means of a fine tenaculum or forceps, and if sufficient substance is at my disposal I excise the edges with a few *cuts of the knife* in a slightly obtuse angle; but in all cases where tissue must be spared, I successively cut off thin layers of substance.

Let us compare these methods of paring: To begin with, I do not consider the *scissors* as good an instrument for the pur-

pose as the *knife*. Indeed, in deep cavities the operation with the former is easier to perform than with the latter; but there can be no doubt that even the sharpest scissors bruise the edges to some extent, and therefore are not as good for a *prima intentio* as those cut with the knife. In plastic operations, scissors are only resorted to where the knife can not be brought into use. I have convinced myself of the advantages of the knife in my numerous plastic operations, especially in cases of broad hare-lip and staphyloraphia,\* in which the scissors were formerly made use of; and, indeed, I do not know of any German surgeon who, for the operation of hare-lip, staphyloraphia, vesico-vaginal fistula, or rupture of the perineum, uses the scissors by choice.

In the operation of vesico-vaginal fistula, in which a complete *prima intentio* is far more necessary on account of the disagreeable consequences of even the smallest part remaining open than in any other plastic operation, the scissors certainly would seem to be less suitable than the knife. Dr. B.'s total failure in his second, and the incomplete result in his third case, might be extensively, indeed, perhaps, totally ascribed to his *paring with scissors*. The edges were in both cases as substantial and as broad as the circumstances admitted, for they involved the whole thickness of the vesico-vaginal and urethro-

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\* Twenty years ago I operated on hare-lip, as I was taught, with sharp scissors and the clamp; but I could only count on a good result where the lips were well formed, which is the case in the fourth, fifth, or sixth month after birth, and even then only when the defect was not too broad. My attempts at closing up hare-lips during the first month, i. e., while the lips are very thin, were generally useless, even in very simple cases. I therefore took to the knife, and now-a-days I operate at the earliest period, namely, from the first day after birth, even complicated double hare-lips, and I can say that but very rarely the defect reopens, notwithstanding I never take the slightest precautionary measures for preventing traction, nor do I ever apply a strip of sticking-plaster. In children of six, five, and even four months of age, I have often operated complicated and broad hare-lips without keeping them under after-treatment, but simply sent them home and had them brought for the necessary after-acts. Even under this treatment the most satisfactory results were gained (compare Rostock Mittheil., ii., p. 13). My results in staphyloraphia also became more certain when I had exchanged the scissors for the knife, as just now stated, in cases of hare-lip.

vaginal septum; they were located in healthy tissue most favorable for *prima intentio*; the traction on uniting the edges was easy to overcome, and after the operation no untoward circumstances happened which might have interfered with a speedy cure. If these edges had been cut with a knife, according to my experience, a cure would have been the result, even though the pared surfaces were not brought into exact apposition by the suture.

Only in those very rare cases in which the fistula is of very difficult access for the knife, the scissors might be preferred, because, under such circumstances, paring can be carried out more exactly than by the latter.

*Addition to this Translation by the Author.*—This view might be opposed by the fact that many hundreds of fistulæ have been operated upon and cured, especially by American colleagues, by means of the scissors. This fact, however, only proves that the vesico-vaginal septum offers far better conditions for a *prima intentio* than thin lips of children or edges of a cleft palate. If, therefore, (I do not mean to contradict) in a large majority of cases of vesico-vaginal fistulæ, paring with the scissors furnishes as good results as the same act performed with the knife, I am, nevertheless, of the opinion that the certainty of good results is increased by the latter method, which is especially to be borne in mind in such cases where the edges are thin and their substance must be economized.

A second and perhaps a still greater disadvantage of Dr. B.'s paring is, *that very large pieces of the edges must be cut off* in order to be sure that the margins are situated in perfectly healthy tissues. In the knee-elbow position, and on exposure by Dr. B.'s speculum, the fistula is not moved forward, but even pushed back, and though naturally situated near the *introitus vaginæ*, is removed pretty far from the vulva. The fistula thereby becomes more difficult of access for the instruments, the field of operation is darkened by the hands of the operator, and the paring can not be so easily controlled, as is necessary under certain circumstances, during that act. Bozeman, therefore, inserts his knife three-quarters to one and a quarter centimetre from the anterior edge of the fistula into the tissues, and

cuts equally broad parts all around the fistula, in order to be sure to have the fresh margins in perfectly normal tissues. No objection can be made against this broad paring\* as long as there is abundant tissue which can be wasted without harm. In all small and middle-sized fistulæ, and even in a number of larger defects where there is no strict contra-indication, broad paring is justified; and I have ever been a defender of it, though I did not pare as broadly as Boz. Such fancy paring is even commendable for inexperienced operators, because thereby the edges are sure to be located in normal tissues. On the other hand, if we have to do with a fistula in which saving of the substance is law, unnecessarily broad excision may be conducive to the most serious consequences.

Under this category are to be counted all those fistulæ which extend into the urethro-vaginal septum; further defects whose edges, after protracted or unsuccessfully practiced preliminary treatment, have not become sufficiently movable to be brought in apposition without considerable traction; and, finally, those cases which are situated in the lateral or posterior part of the vaginal vault. In those in which the urethra is implicated, incontinence may be caused by too extensive paring. In larger fistulæ, where the edges are very immovable, the defect becomes larger, and thereby traction is increased; and, thirdly, the peritoneum may be injured in fistulæ situated in the lateral vaults. In these cases *gradual ablation* of the edges is the mode of paring which answers best under the circumstances. Thin layers of the margin are successively cut away until the edges are situated in perfectly normal tissues. In this way every bit of fancy excision is avoided.

This *gradual ablation* is far easier to perform with a knife than with the scissors, and is in my method rendered a great deal easier, as by antero-dislocation of the fistula and retraction of the posterior wall of the vulva and vagina the way to the fistula is much shortened. It can be done with the greatest

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\* I make a distinction between broad and narrow *paring* and between broad and narrow *excision* (or *ablation*). By the first, only the breadth of the fresh surface is meant; in the latter, the width of the piece cut out is taken into consideration.

case in defects in which the urethra is implicated, and in which this kind of ablation is especially indicated. Vesico-urethro-vaginal fistulæ can be excellently exposed in the coccygo-dorsal position, and usually can be dislocated as far as the introitus vaginæ, frequently even still further forwards, so that the operation is almost performed as if on the surface of the body. In Dr. B.'s exposition parts of the edge one minim in width, which it may sometimes be essential to remove, can not be taken from the anterior edge with the knife, and still less from the posterior edge, where he uses the scissors. At any rate, Dr. B. cut away so much from the edges that but  $1\frac{1}{2}$  centimetre of the urethra, which, before the operation, measured  $2\frac{1}{2}$ , were left. So extensive an excision, which had the above-mentioned evil consequences, was, however, perfectly uncalled for, as the edge of the urethra in question, which had just been operated on, was only covered by a thin cicatrix, and could not possibly have undergone cicatricial change to any great extent. The subsequent cure of the same (only enlarged fistula) by means of paring, which took away but a minimal part of the urethra, furnishes, as I think, the unmistakable proof of Dr. B.'s fancy excision. In this case, as above related, I operated twice more. The urethra itself lost but one and a half to two minims in each operation, since I pared very superficially. In my third and fourth cases the fistulæ were situated in deep grooves at the place of juncture between the urethro-vaginal and vesico-vaginal septum, and its anterior edge was only two centimetres from the orifice of the urethra. Here also I saved substance by superficially paring the borders of the groove and excising but minimal parts of the fistula margin throughout its thickness. Dr. B., who was present at the operation, remarked that in these cases he would pare much more extensively. But had I done so, larger parts of the urethra would have been lost, and even in case of union incontinence was to be feared.

Other disadvantages of B.'s method seem to be founded on the fact that, on account of the transverse tension given the vagina by his speculum, the edges must always be united in a transverse direction, thereby excluding all other kinds of plastic not based on stretching the edges. In transversal, round,

and even long oval fistulæ, transverse union may be practiced with advantage. Longitudinal fistulæ, whose longest diameter exceeds their transverse diameter by only one centimetre, can not be transversely united without the excision of large parts of substance which might have been saved. The line of union is thereby much lengthened and the tension increased. This drawback increases directly with the longitudinal diameter. I always unite in the direction of the longest diameter of the fistula—viz., in transverse, longitudinal or oblique direction, and I think this to be the most rational. In triangular longitudinal fistulæ, whose basis was turned to the urethra and apex towards the os uteri, and in cases of large, square defects, I have united in T-and- $\Lambda$  shape, and achieved cures which, had I adhered to transverse suture, would have been very questionable (see my Rostock Mittheilungen). Besides, in cases which were therefore deemed incurable, I have several times successfully used bridge flaps for covering the defects, and in two cases I made use of petiolated flaps taken from the surrounding parts, and healed them into the fistula.

These latter operations might, on account of the deep location of the fistula in the knee-elbow position, be combined with the utmost difficulties—yes, indeed, almost impossible. Should one attempt to make a transplantation in B.'s position (with his speculum, etc.) the knife would have to be used, and at all events B.'s suture be abandoned.

Besides his paring, B.'s suture might also have contributed to his unfavorable results, though this acceptance seems to me unlikely, because so far as I could judge the fistulæ seemed well closed up. Yet B.'s suture has, besides the difficulties of its adaptation, several disadvantages, which I will now mention in a few words. B. thinks that his button-suture is superior to the interrupted silk or wire-suture, so far as exact adaptation of the edges is concerned; but anybody having seen his suture will hardly be of his opinion. I admit that by it the edges can well be kept together, but exact control of the union is not as safe as in the interrupted suture, where no plate hides the threads during the moment of their fastening. Besides, B. uses very thick wires, and places them comparatively far apart

(one centimetre), and by means of these he draws the edges up against the leaden button. I am of opinion that finer threads put closer together, as in my suture, produce better union. For relaxation of the tissues, as well as union of the edges, is thereby effected from many more points, so that the former is brought about more uniformly, and the latter as closely as possible. By means of sutures, which are here further from, there closer to the edges, and according to necessity are superficial or deep in the tissues, each postulate of a good union is answered to the fullest extent.\*

Finally, if Boz. thinks that his thick wires are less liable to cut into the tissues, and for that reason give rise to fewer suture holes than more numerous fine threads tied immediately on the edges, this position also seems to me to be built on sand; for if fine threads cut through, the tissues generally reunite immediately behind the thread, and in case a little fistula remains, it heals by cicatrization and without the help of art. Thick threads, it is true, are less liable to cut the tissues than fine ones, but if they do so, the danger of permanent fistulæ is evidently greater. I also can not admit that fastening the sutures, without knotting, simply by pressing them up against a pierced lead button, is less conducive to cutting, because the tissues are as firmly compressed as when included in a knot, or on twisting the metallic wires, after Sims. If we consider that not rarely spasmodic contractions of the bladder act upon the united edges which are immovably fixed to the unyielding button, the weight of which constantly exerts traction on the suture, it is much more likely that B.'s suture can be damaged by tension, and thereby favor the cutting of the wires than the above compared simpler sutures.

In Dr. B.'s cases I have indeed been able to follow the suture incisions into the reopened fistula, notwithstanding the wire had been carried through the borders far from the edge. Bandl also remarked that, in Dr. B.'s fourth case which he operated on in Vienna, it was high time to take out the sutures. For, although on the eighth day the cure was completed so that no

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\* See my *Mittheilungen aus der Chirurgischen Clinique in Rostock, etc.*



more traction could take place on the edges, the suture had almost entirely cut through the tissues.

After the above investigations, the second question must be answered in the following manner: *My paring and suture are, from the different above-mentioned reasons, to be preferred to the same acts in Dr. Bozeman's operation, and that the failure in his second case must be ascribed to the method itself and not to accident.*

REMARKS ON DR. BOZEMAN'S FISTULA OPERATIONS IN VIENNA.

To the above discussions of the fistulæ operated on in Heidelberg, I take the liberty to add a few remarks on Dr. B.'s fistula operations in Vienna, which Dr. Bandl has very clearly described.\* In Vienna Dr. B. had better results than in Heidelberg, for of four fistulæ he completely cured three, and in one only a very fine opening remained. These fistulæ prove to be merely such as any expert can cure, whether he operates in the knee-elbow, the side, or the coccygo-dorsal position. The cases were, in my opinion, comparatively favorable.† The fistulæ were located in the median line of the vagina and in the fundus of the bladder, where they are easiest of access, and where a cure is most likely to take place. In all of them there was enough substance, even for broad paring, and after dilatation of the contracted vagina, which was found necessary in three cases, the edges could be united without much tension. The urethra was intact in all cases; two defects (figures 2 and 4) extended towards it, so that it was involved in the paring, but only small parts of it were taken off. Even in the largest defect (Case II) the prognosis was not at all unfavorable. From its posterior edge to the uterus there were still two centimetres of the vesico-vaginal septum left, and the distance from the exterior orifice of

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\* Dr. Bozeman's method of operation for vesico-vaginal fistula, etc., Wiener Medizinische Wochenschrift, 1875, No. 49, 52.—*Bandl*.

† Such they were, especially when compared to the fistulæ operated on in Heidelberg, of which only one was favorable, viz., Dr. Bozeman's first case. In Heidelberg we generally treat but very difficult cases. Most of our patients come from a great distance, and have either been operated on by others, sometimes by skillful operators without success, or the operation was never undertaken, being thought too difficult to cure.

the urethra to the anterior margin of the fistula was  $3\frac{1}{2}$  centimetres. Broad excision could therefore be resorted to, not only in the posterior but also in the anterior edge. Indeed, such good edges could be produced, and their adaptation could be so exactly carried out, that I was astonished at Dr. Bozeman's remark: "He would be satisfied if only five sutures would hold." For under similar circumstances I would with my paring and suture expect a perfect cure.

Dr. Bandl, the reporter, lays special stress on the fact that three of the fistulæ were very inaccessible on account of contraction of the vagina, and that he could not expose them with my modified Sims' speculum. According to common usage, therefore, transverse or oblique obliteration of the vagina would have been indicated; but that Dr. B., by means of his preparatory measures, had been able to accomplish a cure of the fistulæ by uniting their edges, I do not pretend to be able to give a perfectly correct judgment, as I have not seen or examined the cases myself, but I believe that I may be allowed to claim that Dr. Bandl's first examination with the speculum only, and without any other instrument for the exposure of the fistula, without chloroform narcosis, and without dividing the impeding contractions, is no proof of the inaccessibility of the fistulæ in question. From the description of the existing relations, I would probably not have deemed any preliminary treatment necessary in the first and fourth cases, and in the second case I would have resorted to repeated tractions on the womb, and perhaps divided one or the other of the cicatricial bands. I should most likely have omitted the gradual preparation, because only one thick cicatricial band narrowed the vagina and rendered the posterior edge of the fistula immovable.

For the purpose of exposing the fistula, I would probably have divided the impeding contractions and adhesions with the knife, thereupon expanded the vagina by means of my specula, and completed the operation either with or without dislocating the parts surrounding the fistula. Whether the result would have been favorable must naturally remain undecided, though it may be considered very probable; for in the third and fourth of the above-described cases I have overcome similar, perhaps

larger difficulties, although Dr. B. thought a gradual preliminary treatment necessary, and indeed had begun the same, but in vain.

Up to the present time I had almost entirely practiced *rapid preparation*, and but rarely thought a *gradual preparatory treatment* necessary. I divide the contractions of the vagina which make the fistula immovable immediately before the operation of the fistula with the knife, and generally cut them at different places. In the lateral parts and the anterior wall of the vagina, I make deep incisions, if necessary; in the posterior wall, where the peritoneum might be injured, I make but shallow scarifications. Thereupon I distend the vagina by introducing a set of grooved and flat specula increasing in size, practicing scarifications at such places where I find dilatation prevented by cicatricial tissue. By exerting traction on the lips of the os uteri and on the posterior edge of the fistula, I attempt to make the parts movable, and draw them forwards and outwards, so long as this can be done without exerting great power. Tenacula are then used to bring the parts still more into view. Often it is perfectly astonishing to see how quickly fistulæ which were scarcely visible can be made so easily accessible that they can be operated on without any difficulty. I believe I have achieved as much by rapid preparation as has ever been done by gradual dilatation. As becomes evident from my third and fourth cases, it can be effectually practiced under circumstances where gradual preparation must be abandoned.

*Rapid dilatation* is frequently more difficult than gradual enlargement, and sometimes requires a good deal of experience, so that unpracticed operators do not often succeed with it, but it has various advantages over the other method. It not only shortens the time of treatment by weeks and months, but is also much less dangerous. On gradual dilatation, where the incisions into the cicatrices are distended by force for several hours each day, the pus and urine, which rapidly undergo decomposition, are kept in the vagina in contact with the open sores. Colpitis, cystitis, and if the connective tissue surrounding the pelvic organs be exposed, suppuration and sloughing of the same, parametritis, even pelveo-peritonitis, may arise and

put the patient's life in danger. On rapid preparation, immediately followed by the closing of the fistula, the vagina is not kept extended for any length of time by a tampon, matter flows off directly, and urine does not stagnate nor undergo decomposition in the vagina. In my treatment I have, comparatively, very frequently practiced rapid dilatation; but I remember no case followed by so heavy symptoms of reaction as Nos. 3 and 4 of the Heidelberg cases, in which Dr. B., and a third case a few weeks later in which I, with Dr. Markwald, (Berlin) attempted gradual dilatation. For the more experienced, therefore, I consider rapid dilatation indicated whereas exceptionally gradual dilatation may be of use. Should the posterior edge of the fistula be very closely attached, tractions on it and the os uteri would precede rapid dilatation. Under all circumstances it is very advantageous to expose and examine the fistula several times previous to operating on it, in order to become acquainted with the most suitable instruments and manipulations to be used, and also to the impediments opposing its exposure. On all difficulties of exposure the less practiced had better resort to gradual dilatation, and to relinquish it only when in spite of the greatest circumspection the patient can not bear it. If after the cure the rapidly dilated vagina should contract, gradual dilatation may now be undertaken with lessened danger.

That Dr. B., as the reporter repeatedly urges, *strives to obviate transverse obliteration wherever possible*, is decidedly a correct principle, and gradual dilatation might with the unpracticed in the future greatly diminish the number of transverse obliterations.\* Nevertheless, this operation, the priority of whose discovery Dr. B. formerly disputed, but which he now concedes to me, will never be forsaken in such cases where the

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\* Within the last years I treated two Russians, in which transverse obliteration had been carried out by two German colleagues. The patients, not satisfied with their state, traveled to Heidelberg, when I discovered after bloodless dilatation of the urethra, and by palpation of the bladder, that both fistulae were comparatively small. I therefore opened the artificial atresia, severed the narrowing cicatricial bands and cured the fistulae. The former operators seem neither to have tried gradual nor rapid dilatation of the vagina.

edges of the fistula can not be united after a long-continued preparatory treatment was fruitless, or not sustained by the patient. If in such cases transplantaion from the surrounding parts can not be carried out, nothing remains but transverse obliteration of the vagina. In the summer in which I expected Dr. B. in Heidelberg, transverse obliteration of the vagina had to be carried out in the patient whom I treated together with Dr. Markwald. The loss of substance extended in this case from one centimetre forwards of the os uteri to two centimetres from the orifice of the urethra. The vagina was so narrow that it admitted only one finger, and all the parts surrounding the fistula, with the exception of its anterior edge, were so firmly attached to their neighborhood as to make them perfectly immovable. The fact that its lateral edges were but two-thirds of a minim in width, callous, and attached to the bone, was especially unfavorable. Now, although convinced that even if, after dilatation of the vagina, the middle part of the posterior edge was rendered movable, and the lateral parts of the fistula were found to remain open, I still wished to try whether by gradual preparation circumstances could not be so much bettered as to allow of a transplantaion. I severed the strictures and used nothing but *soft* tampons; but from the fifth day pelveo-peritonitis developed to such a degree that recovery remained doubtful for a long time. It took ten weeks for the patient to recover before transverse obliteration, now indicated, could be performed. Occlusion was gained. Continence is only complete in the horizontal position; when standing or walking nearly all the urine flows off, because the remains of the urethra, only two centimetres long, had to be shortened in the operation. Nevertheless, her present state is a great gain for the patient. In such and similar cases, transverse obliteration must be performed, and if there be one-fourth or one-half-centimetre of the urethra left, complete continence will be the result. Then the operation will be what Dr. B. called it in 1868: "An important operation," because by it the patients become liberated from the most terrible symptom of their suffering, viz., incontinence.\*

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\* See my article, Historical Remarks, etc. (Deutsche Klinik, 1868).

In his article in the "New York Medical Record," Dr. B., in order to show to what extent transverse obliteration should be shunned, has stated that pyelitis suppurativa is the consequence of this operation, and has cited my second case as new proof for his view. I do not know on how many observations Dr. B. bases his view, but I can oppose the fact that I have seen at least ten patients in which transverse obliteration has been performed, who, ten years afterwards, enjoyed most blooming health. To be sure, I did also witness several cases that died from pyelitis suppurativa, either with or without formation of calculi. But in this case transverse obliteration was not the reason, but contractions and deformation of the ureter, which were caused by cicatrization of lesions produced during delivery. Generally, symptoms of pyelitis had existed previous to kolpopleisis.

In my second case, also, both ureters were much contracted near their insertion into the bladder. Indeed, I know of no reason why transverse obliteration of the vagina, after which the urine does not stagnate *any more* in the bladder than normally, should produce pyelitis suppurativa.

Dr. Bandl extols as an advantage of Dr. B.'s operation, that it is performed *in situ of the parts involved*. But I do not know wherein this advantage consists; for it is perfectly equivalent for the cure whether the parts remain in situ during the operation, or are only brought there after the operation, as in my method. Operating in situ and with Dr. B.'s mode of exposure, the operation can only be exactly performed with the scissors. If artificial antero-dislocation of the parts involved can be practiced, the knife can be used and the operation done with such a degree of exactness as can not be reached by the other method; therefore, in all cases where my exposure can be employed, I consider my method absolutely better than Dr. B.'s, and only in such cases where the fistula is situated high up and can not be dislocated, the question might arise whether in a given case the one or the other of the methods deserves preference. It is remarkable that many operators, yes, even followers of my method, have perfectly overlooked or not sufficiently valued the advantage of artificial descensus (antero-dislocation).

Ullrich, in Vienna, for instance, has invented an apparatus to fasten the fistula during the operation, which, as every apparatus of the kind, must render dislocation forwards, i. e., to the surface, impossible. Such an apparatus could only be used to advantage in my method in case of an immovable fistula when dislocation is impossible.

I must also recur to the question of catching of the ureter in the suture. Bozeman makes this circumstance answerable for the small fistula remaining after his second operation in Vienna. The history of the case, however, states that the visible orifice of the ureter was split to the extent of one centimetre in an outward direction, and it is therefore difficult to understand how the second last and not the last (most outward) suture which corresponded to the remaining fistular opening should have compressed the lumen of the ureter.

To me the reason for the remaining small fistula seems also to be based on other moments. If Dr. B.'s supposition was correct, that in Heidelberg and Vienna, as well as formerly in Paris,\* the ureter had been caught in the suture, and that thereby the little remaining fistulæ had been produced, we would have to conclude that his suture apparatus was especially unfavorable; for, as above stated, this occurrence has never been found an obstacle to a cure by me, nor by other operators.

I was astonished that the reporter considered the result of Case II equal to a cure, though the worst spot had remained open; for, according to Dr. B.'s, as well as Dr. Bandl's view, the remaining little opening was a vesico-urethro-vaginal fistula. Now, as Dr. B., in the operation of the large defect, could not avoid the visible ureter, it must be anticipated that he will still be less able to do this at the operation of the small fistulæ, at which the ureter will, of course, be much less visible, perhaps not seen at all.

I have spoken at such length about Dr. B.'s method of operation, because by far the greater number of fistulæ can be cured by it, so that it can not be excluded from competing with the

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\* See below, Critical Remarks on Dr. B.'s article in the New York Medical Record.

two methods in general use, viz., Sims-Emmet's and my own.\* But it will never become very popular, because, in a number of cases, the two latter methods do the same, and in some cases even more in a simpler way, and with less costly instrumental apparatus. Bozeman's proceeding is complicated, and the position of the operator is a very forced one, and at the same time so wearisome that, in difficult cases, an immense amount of time and the most extreme perseverance is required on his part. For how long would a less skillful man operate, when Bozeman himself required four and a half hours in a difficult case for the completion of an operation? It is my opinion that Dr. B.'s method would gain considerably if he abandoned his complicated button-suture and adopted the simple silk or wire-suture; besides, if he would give up the superfluous, and sometimes even obnoxious, after-treatment with the catheter en permanence, in favor of my perfectly negative after-treatment.† Finally, I believe his results would be much improved, if in all such cases in which substance must be sparingly pared—I mean such fistulæ as extend into the urethra—he would substitute my mode of operation for his own.

From our Heidelberg operations, and more especially from the description of the Vienna cases, I have derived this benefit, that I now estimate gradual dilatation higher than I did heretofore, and I believe that it deserves urgent recommendation to inexperienced colleagues.

In regard to the exposure of the fistula, I will always try all positions in general use, and choose the one which furnishes the easiest access. \* \* \* \* \*

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\* These three methods are especially distinguished by the different positions, the mode of exposing the fistula with its consequences in regard to the facility and certainty of the operation. Preparatory treatment and after-treatment, however, are independent of the method. The material of the suture, whether metallic wire or fine silk thread, does not involve a material difference. In a future article I will compare each single act of the three methods, but especially, however, Sims' method and my own, and explain their differences at some length.

† Marion Sims, who, a short time ago, was in Heidelberg, made us acquainted with his manner of position and of exposing the fistula, and verbally stated that, of late, he only exceptionally uses a permanent catheter in the after-treatment.



Thus much about Bozeman's operations performed in Heidelberg and Vienna; as regards our "concoirs," it was not yet closed. The number of cases was yet very small, and I had as yet not operated on a fistula situated high up; Dr. B., on the contrary, had operated on two cases of high fistula, and one deep, extending into the urethra. We had, therefore, agreed to continue the operations in the summer of 1875. I was then to operate on the fistulæ situated high up, more difficult of access, but easier to cure. He (Boz.), on the contrary, was to operate on such as were situated further down, easier of access, but more difficult to cure. Especially was Dr. Bozeman to operate again on that fistula in which his result was so very unfortunate (Case II, which he had said he was able to cure with continence). To my regret, he never came back to Heidelberg any more.

In July, 1875, Dr. B. had published, without my knowledge, an article in the "New York Medical Record," and another in August in a Geneva political paper concerning our operations. For this reason I became acquainted with both of them only by chance, and very late after they were printed. Passing over the latter in silence, as written for an unscientific public, I must enter on the first, which was calculated for medical men, more closely, because in it are contained many inaccuracies and incorrect statements.

REMARKS ON DR. BOZEMAN'S ARTICLE IN THE NEW YORK MEDICAL RECORD, JULY 25, 1875.

I here quote the most startling sentences. In regard to the extent of the fistula and result of the operation in my first case, Dr. Bozeman says :

"The first case presented a good-sized fistula, which occupied the base of the bladder. About seven-eighths of the fistula was closed."

In this case not only the whole of the base of the bladder, but also the lateral parts of the vaginal vaults and a part of the urethra were defective. After the operation there was not one-eighth of the defect open, but only a small fistula the size of a lentil or a pea, at the highest, one-twenty-fifth of the line

of union (see figure 2). Afterwards, when describing his second case, Dr. Bozeman says of the remaining opening, "the fistula was small."

In the description of my second case the following passage occurs:

"The operation which he performed had for its object the reclosure of the vagina, which I witnessed. It was kolpokleisis for the second time."

In this case I had, six years ago, completed an atresia of the vagina occurring after heavy labor by closing up a small opening. A stone, which was very likely not formed in the bladder, but in the kidney, and which had descended into the bladder, had perforated that part of the urethra which lay immediately between the obliterated vagina and orifice of the urethra, not, however, the cicatrix itself; therefore I did not perform a second kolpokleisis, but I united the edges of the urethro-vaginal fistula in a longitudinal direction, that is, in a direction at right angles with the obliteration of the vagina. The line of union extended close to the orifice of the urethra (see figure 3).

Concerning the result of my third case, Dr. Bozeman says:

"The operation succeeded only to a limited extent, the failure being due probably to the cystitis which still existed to a slight extent at the time of the operation."

In this patient only a small fistula had remained, which, on examination four weeks after, had spontaneously perfectly closed, so that here a complete cure was subsequently achieved by the operation. The patient suffered from cystitis, pains in the lumbar region, and fever after the operation; nevertheless, a cure ensued. Bozeman had in this case (he does not mention it) unsuccessfully tried gradual dilatation. I therefore instituted rapid extension immediately before the operation.

My fourth case is thus described by Bozeman:

"The fourth case of Prof. S. was a young woman, aged about twenty. She had a small fistula at the root of the urethra with complete atresia of the vagina above, with no outlet for the menses. Prof. Simon proposed in this case to close the fistula as the first step of the treatment; but instead of closing the fistula as he intended, he closed the vagina below the fistula,

thus making the operation one of kolpokleisis, with no provision for the escape of the menses. The result was only a partial success, and further treatment will be required to complete the occlusion."

In this case the fistula, as represented in figure 5, is situated below an atresia of the vagina, which, however, was not complete. There was an opening on the right side which led up to the right side of the os uteri. Bozeman tried (and this fact he admits also) to dilate the vagina from the opening described, but in this case also without success (see history of Case IV). I therefore operated on the fistula, dividing the contractions of the vagina immediately above it so as to have easy access. The result was the one in which but a small fistula remained at the extreme corner which had not been caught in the suture (see figure 6). It is hard to comprehend how Dr. B. here also came to the conclusion that kolpokleisis was performed. After having read Boz's statement, I have at various times examined the patient in the presence of assistants and students, as well as traveling colleagues, and we have found the relation of the cured fistula to the incomplete atresia of the vagina, as given in figures 5 and 6. Through vaginal opening on the right side the os uteri can be reached; the partial atresia is situated above the healed fistula.

In the description of my second case, Dr. B. states :

"The second case was the one Prof. Simon first operated upon with partial success.\* The fistula was small and involved the cervix uteri, perfectly simple and easy to get at, as shown by the fact that it took only thirty-five minutes to complete the operation. The case was just such a one that I would have guaranteed to cure in eight days, if I had had entire management of the after-treatment. But, as it turned out, the after-treatment was not properly carried out, and cystitis resulted,

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\* Dr. B. calls the result of my operation a partial success; a fistula of the size of a lentil or a pea had remained (see figure 2); but when Dr. Bandl puts the second of his Vienna cases among "the cures," though an opening the size of a probe-knob had remained (not much smaller than mine), and which he himself calls a vesico-uretero-vaginal fistula, he quietly accepts the situation.

which caused the fistula to reöpen two days after the suture apparatus was removed."

Here the fistula had not only totally reöpened, but had become incurable so far as continence of the urine is concerned, and as I have above explained (see critical examination of the cases). I am convinced that by Dr. B.'s paring and suture the fistula could not even have been closed (see case). The fistula did not reöpen two days after the suture apparatus was removed, but urine flowed from the fistula at the time it was taken off. True, the fistula was only found completely open on examination two days afterwards. Dr. B. here accuses the after-treatment of the unfavorable result as not having been carried out according to his wish. But he conducted the after-treatment himself, as above stated. He visited his patient three or four times a day, and my very skilled assistants carried out all he wished for. I can not imagine how Dr. B. could have better provided for the after-treatment. The fullest proof that the after-treatment was not the reason of his bad success is given in the fact that I cured the fistula under far more difficult conditions without the use of the catheter, the rinsing of the bladder, and without opium. Dr. Bozeman afterwards changed his opinion. In a letter which I received from him, dated Paris, October, 1875, he assigns as the reason for his failure ignorance as to the relative position of the urethra and fistula during the operation; and, besides, that in my previous operation the edges had not been pared and united in the knee-elbow position, that is, not in situ of the parts!

In the description of his third case, Dr. B. remarks:

"The operation proved tedious and protracted, though it was entirely satisfactory. Prof. S. expressed himself satisfied, and said he did not see how it could fail to succeed. Six or eight hours after the operation, I found an unusually small quantity of urine passing per catheter, which at once aroused my suspicions as to the right ureter being closed between two of my sutures. A few hours later the patient had great pain in the right kidney, and then felt a gush of urine into the vagina, with complete relief. When I saw her again, about eighteen hours after the operation, and learned the true story of the case, I

told Prof. S. we would have a partial failure of the operation corresponding to the point at which the right ureter lay in the posterior edge of the fistula. The same accident having occurred some years ago in a case in the Hôtel-Dieu of Paris, upon which I operated, and in other cases, I felt confident of the final result—a partial failure. The removal of the suture apparatus on the eighth day in this case fully confirmed my explanation. A small fistula remained about the middle of the line of cicatrization, which was nearly two inches in length. This remaining fistula is, properly speaking, a vesico-uretero-vaginal fistula. Now that the precise situation of the ureter is known, there can be no difficulty in the next operation, when a complete cure may be expected.”

The remaining fistula was not as Boz. states, situated in the centre of the cicatrix, but at its inward (next to the middle line) end, just before the anterior lip of the os uteri, and is no vesico-uretero-vaginal, but a common vesico-vaginal fistula. It is, therefore, situated more favorably, and is not of as bad a nature as Boz. makes out. The symptoms which he (B.) describes as proof for the compression of the ureter by a suture, are by no means characteristic. The fact that but a very small quantity of urine had passed through the catheter the first six or eight hours, the pains in the lumbar region which appeared a few hours later in the right kidney, and their relief after a sudden gush of urine, may all be accounted for by an incomplete occlusion of the catheter, caused by a clot of blood. For this reason the urine flowed very scantily from the catheter, the greater part being retained in the bladder. When the bladder was highly distended the coagulum was forcibly thrown out, and the urine partially escaped along the side of the catheter.\* The reason that the pain in the region of the kidneys was unilateral, doubtless rests on casual circumstances, or accidental assertions of the patient, who was still considerably under the influence of chloroform; for pains which arise after sudden occlusion of the ureter ap-

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\* Bozeman supposes that the gush of urine passed through the vagina, perhaps, because the sheet was wet. But of course neither he nor the patient could possibly judge whether the urine had taken its way through the fistula or through the urethra, alongside of the catheter into the underlying sheets.

pear much sooner, as I have observed, after closing the ureter by cauterly in cases of uretero-vaginal fistulæ, about one or at the most two hours after the occlusion, and they are of extreme vehemence. They appear under the picture of severe colic of the kidneys. (See my paper in Scanzoni's Beiträgen, Vol. VI, 1860.) Bozeman here considers the cure of vesico-uretero-vaginal fistula very easy, because he is acquainted with the location of the ureter, quite in contradiction with his second case in Vienna (see above).

At the close of his article the following sentence is found :

"At the second operation of Prof. Simon and myself, which we performed the same day, Dr. Kœberlé, of Strassburg, the celebrated ovariologist, was present. He came to Heidelberg and spent two days to see us operate. Prof. S. frankly admits the superiority of my operation in all cases when the fistula is situated high up. He is delighted with my speculum, and, indeed, has ordered all my instruments to be copied, even my operating chair."

In regard to the remark which I passed on Dr. B.'s method after his first operation, I have above explained myself. It is evident that it was very prematurely published. If Dr. B. had asked my opinion a little later he would have heard that it was very soon changed. Concerning the acquisition of Dr. Bozeman's instruments and apparatus, I have in a letter to Dr. Beigel, who asked my opinion, said that I had bought the same, partly to demonstrate them to my scholars, and partly to make experiments with the same.\* Up to the present time I have not been so converted to use Dr. B.'s method. In the summer and fall of 1875 I cured nine fistulæ, all clinical cases (six of them, each by one operation), but have never once made use of Dr. Bozeman's method, because I felt convinced that I would succeed more quickly and safely with my own.

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The above criticism of Dr. B.'s articles was necessary in

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\* See Wiener Med. Wochenschrift, 1876, No. 5 (note by the translator). There is a fund in every German university for buying instruments, though they be never used, merely to complete the armamentarium collection of the cliniques.

order to state the facts correctly before the Profession. Yet I am far from reproaching Dr. B. for having willingly made incorrect statements. I am rather of the opinion that it was his ardent zeal for recognition (acknowledgment) (?) which prompted him to publish these over-hasty statements.\* The main errors were caused by the fact that Dr. B. did not take the trouble to examine the results of my operations later than the fifth or seventh day after the lifting of the sutures, when examination was very difficult, even to myself. Had he watched the results after cicatrization, and taken more pains to study the pathological relations of the fistulæ which I had operated upon before him, he would have been better posted. Thus it happened that he came to call the result in my third case, in which a complete cure was achieved after spontaneous occlusion of the little fistula, a cure of "limited extent;" and that in the fourth case, in which but a small fistula at one end, which had not been comprised in the suture, remained, was called "only a partial success." By his superficial examination he arrived at the marvelous conclusion, that in my second and fourth cases I had practiced transverse obliteration of the vagina, though in the second case the fistula was united at right angles to the preëxisting obliteration of the vagina (figure 3); and though he had himself tried bloody dilatation and tamponade of the vagina (figures 5 and 6). Dr. Bozeman certainly is too expert an operator on fistulæ not to know that the result after cicatrization, and later by contraction of cicatrix, often becomes materially better than it seems while the edges are not yet completely cicatrized. Doubtlessly he also knows that pathological relations which may be connected with a fistula are frequently only fully cleared up after repeated and careful explorations.

I have asked Dr. B. several times myself, to examine the fistulæ, once on his travels through Heidelberg, about six or eight weeks after the operations, and in two letters written to him to

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\* In the Geneva article I find the author complains that Dr. B. is not appreciated according to his merit by his American colleagues. The sentence is the following: "We have heard it hinted that the welcome which Dr. B. has met from the profession in Europe is with contrast to the treatment which he has received at the hands of some of his professional brethren in America."

Paris in October of the same year. But the first time he had to depart too soon, and the second time he said he was kept back by family affairs from a journey to Heidelberg. But even if there was no chance for him to examine the fistulæ personally, Dr. B. might easily have avoided errors in his statements, or corrected them in a subsequent article if he had only inquired about the final results by letter. From the reception which he found among us, and which he himself publicly acknowledged, he had to conclude that full statements would most willingly have been furnished him. \* \* \* \* \*

Finally, I must add that this article appears thus late because I expected Boz. back here for a continuance of the concours until October, 1875. When he was not able to come I waited some time longer, in order to communicate the result of my operations performed in October and November on the patient, on whom he had unsuccessfully operated (see his second case). When at last I came to write the article, my health was so impaired that I could only work at it very slowly.

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## PROCEEDINGS OF SOCIETIES.

"Etsi non prosunt singula, juncta juvant."

### The Tri-States Medical Society.

The Tri-States Medical Society of Illinois, Indiana, and Kentucky held its second annual meeting at the Court-house in the city of Vincennes, Indiana, on Tuesday, Wednesday, and Thursday, November 21, 22, and 23, 1876.

The following physicians are members of the Society: Drs. G. W. Burton, Mitchell, Ind.; J. S. Dukate, Wheatland, Ind., J. C. Patten, Princeton, Ind.; J. W. Gray, Bloomfield, Ind.; J. W. Genish, A. H. Charlton, Seymour, Ind.; J. F. Mitchell, Vernon, Ind.; N. D. Gaddy, Lovett, Ind.; T. H. Rafferty, Palestine, Ill.; F. W. Beard, H. M. Smith, Vincennes, Ind.; W. C. Smydth, Washington, Ind.; J. W. Thompson, Paducah, Ky.; L. J. Williams, Terre Haute, Ind.; J. W. Peck, Washington, Ind.; H.



Patten, Vincennes, Ind.; B. F. Swafford, J. B. Armstrong, Terre Haute, Ind.; J. C. Buer, W. H. H. Beeson, Vincennes, Ind.; J. W. Pritchett, Madisonville, Ky.; J. H. Letcher, Henderson, Ky.; G. B. Walker, W. J. Bray, Evansville, Ind.; E. W. Hene-gate, Sandbone, Ind.; W. H. Smith, Newman, Ill.; T. N. Lounsdale, Clay City, Ill.; J. L. Moore, Ottwell, Ind.; J. B. Mantle, Vincennes, Ind.; Ezra Read, Terre Haute, Ind.; L. E. Munford, Princeton, Ind.; A. R. Byers, J. W. Adams, Petersburg, Ind.; W. H. Howard, Hazelton, Ind.; J. F. Gudgel, W. W. Lemmon, G. G. Barton, Washington, Ind.; J. T. Freeland, Freelandville, Ind.; J. W. Cartright, Hallettsville, Ill.; J. Hays, Bridgeport, Ill.; L. J. Sheppenstein, E. Bosoyer, Olney, Ill.; M. Witherspoon, Breedville, Ind.; R. B. Jessup, Vincennes, Ind.; T. J. Ford, Russellville, Ill.; A. F. Berry, River Vale, Ill.; J. S. Thompson, Palestine, Ill.; J. L. Dismukes, Mayfield, Ky.; B. F. Keith, Edward's Port, Ind.; R. H. Crowder, Sullivan, Ill.; E. W. Boyles, J. M. Billings, Clay City, Ill.; J. W. Singleton, Paducah, Ky.; J. W. Compton, Evansville, Ind.; Paul D. Cartener, Henry S. Bell, Hazelton, Ind.; H. H. Deming, Pana, Ill.; R. H. Bradley, Marshall, Ill.; J. P. Worrell, Terre Haute, Ind.; H. Wardner, Cairo, Ill.; Henry Geiss, Washington, Ind.; W. H. Byford, Chicago, Ill.; J. A. Ireland, Louisville, Ky.

There was a large attendance of the membership present.

The Society was called to order by the President, Dr. J. W. Thompson, of Paducah, Ky., on Tuesday, November 21, at 7:30 P. M., when the Rev. H. B. Thayer, of the Presbyterian Church, addressed the Throne of Grace in behalf of the objects for which the Association was now organized. He prayed that our Heavenly Father would cement the hearts and minds of the votaries of medical men everywhere in the benevolent and humane purposes of their profession, remembering always "that it is God who healeth our diseases and saveth our lives from destruction."

At the conclusion of Dr. Thayer's prayer, the chairman proceeded to call the regular order of business.

Dr. W. H. Smith, of Newman, Ill., read a brief and practical paper, which thoroughly discussed the uses of ergot. It was referred to the Publishing Committee.

A noticeable feature of Dr. Smith's essay on ergot was the recommendation of from twelve to fifteen drops of the fluid extract of that article for the relief of morning sickness in pregnant females. He also recommends the same article, judiciously given, to prevent abortion.

The President's address was made the special order for Wednesday at 2 P. M.

The report of Dr. J. A. Ireland, of Louisville, Ky., was made the special order for Wednesday at 11 A. M.

Adjourned until 8½ A. M., Wednesday.

#### WEDNESDAY'S PROCEEDINGS.

The Society was called to order promptly at 8½ A. M., when the Committee on Nominations was announced, as follows: Drs. Peck, of Indiana; Boyles, of Illinois; Singleton and Letcher, of Kentucky. The committee to report on Thursday at 9 A. M.

The fee for membership was fixed at \$1 for admission, and \$3 for annual dues from each member.

On motion of Dr. Mitchell, of Vernon, Ind., a committee of three was appointed by the Chair to draft resolutions of respect to the memory of Dr. Willis W. Hitt, deceased, lately a member of this Body. Drs. Singleton, Mitchell, and Mantle were assigned to that melancholy duty, who at once reported a preamble and resolutions, which were recorded upon the minutes and ordered to be published.

Dr. W. H. Byford, of Chicago, afterwards read a brief biographical sketch of our lamented brother, which was referred to the Committee of Publication, and made a part of the proceedings of this meeting.

Dr. J. W. Compton, of Evansville, then read an excellent essay on the Solution and Absorption of Medicines, which was appropriately discussed and referred to Publishing Committee.

Thanks of the Society were unanimously voted to Drs. G. W. Burton and F. W. Beard, the two able Secretaries, for the efficient manner in which they performed their respective duties.

At 11 A. M. Dr. J. A. Ireland read his report on Obstetrics, which was listened to with deep interest, appropriately discussed, and referred to Publishing Committee. Adjourned till 1 P. M.

## AFTERNOON SESSION.

Society met pursuant to adjournment, with Dr. W. H. Smith, of Newman, Ill., in the chair.

At 2 P. M. the President, Dr. Thompson, began the reading of his address. Dr. T.'s paper embraced a comparison between ancient and modern medicine and surgery. He examined the works of Hippocrates and Galen, William and John Hunter, Harvey and Jenner, not forgetting our own immortal McDowell, whose fame belongs to no one country, but to the whole world. He drew a striking parallel between statesmen and men of science, showing that the reputation of political stars perishes with the dead issues that rendered them famous, while those who have discovered and applied successfully remedies for the relief of disease will live forever in the warm hearts of grateful generations to come. Dr. Thompson's address was a truthful and philosophical tribute from the State of Kentucky to the medical descendants of Drake, Dudley, Miller, and McDowell in Indiana and Illinois, fully representing the dignity and honor of the medical profession in the State of Kentucky, and generously appreciated by his big-hearted brethren of the Tri-States Society. Dr. T.'s address was ordered to be published.

When Dr. T. had concluded, Dr. Bernard Tauber, of Cincinnati, gave the Association an interesting illustrated lecture on the treatment of Diseases of the Larynx, for which Dr. Tauber was voted the thanks of the Society and unanimously elected to honorary membership.

Dr. Wm. Dickinson, of St. Louis (by invitation), read an able paper on Nervous Diseases of the Eye. Dr. Dickinson received the thanks of the Society and was elected an honorary member.

Dr. Thos. Rumbolt, of St. Louis (by invitation), contributed a lengthy paper on Catarrhal Affections of the Nose and Ear, with illustrations, which was appropriately referred. Dr. R. was elected to honorary membership and received a vote of thanks.

Dr. Ezra Read, of Terre Haute, Ind., followed with a report on Traumatic Tetanus. Referred to the Publishing Committee.

The reading of Dr. Byford's lecture was made the special order for 8 P. M. Adjourned until 7:30 P. M.

## NIGHT SESSION.

The Society convened according to appointment, when Dr. W. H. Byford, of Chicago, Ill., delivered an address upon the Second Decade of Life. Referred to the Publishing Committee.

Dr. Byford's paper is one of rare interest to the profession, and when published by the Society, can not but receive the unqualified endorsement of physicians everywhere.

Dr. J. O. Stellson, of Bedford, Indiana, followed Dr. B. with an exhaustive comparison between the Medical Education of Europe and America. Referred to the Publishing Committee.

Adjourned until Thursday at 8½ A. M.

## THURSDAY'S PROCEEDINGS.

The Society met pursuant to adjournment, when Dr. Peck, Chairman of the Committee on Nominations, made the following report of officers for the ensuing year: President, Dr. W. H. Byford, of Chicago, Ill.; First Vice-President, Dr. John L. Dismukes, of Mayfield, Ky.; Second Vice-President, Dr. G. G. Barton, of Washington, Ind.; Third Vice-President, Dr. H. H. Deming, of Pana, Ill.; Recording Secretary, Dr. G. W. Burton, Mitchell, Ind.; Corresponding Secretary, Dr. F. W. Beard, Vincennes, Ind.; Treasurer, Dr. A. Patten, Vincennes, Ind. •

Time and place of next meeting the third Tuesday in October, 1877, at 2 P. M., in the city of Evansville, Ind. Report unanimously adopted.

After the adoption of the foregoing report, Dr. J. B. Armstrong, of Terre Haute, read a brief and practical paper on the Pneumonia of the Wabash Valley, which was referred to the Publishing Committee.

Dr. J. P. Worrell, of Terre Haute, followed Dr. A. with his report on Conjunctival Diseases.

Dr. S. E. Munford, of Princeton, Ind., then entertained the Society on Clinical Observations; and the Recording Secretary, Dr. G. W. Burton, read a thoughtful essay upon Puerperal Peritonitis, which were well received and appropriately referred.

Dr. J. A. Ireland, of Louisville, Ky., was appointed chairman of the section on Obstetrics; Dr. Ezra Read, of Terre Haute, as chairman of the section on the Practice of Medicine;

and Dr. J. W. Thompson, of Paducah, Ky., as chairman of the section on Surgery, for next meeting.

A resolution was adopted authorizing the Recording Secretary to assess a pro rata demand on each member to meet the expense that may now be unprovided for in the publication of the Transactions of the Society.

Drs. Ireland, of Louisville; J. W. Gerrish, of Seymour, Ind.; and Jessup, of Vincennes, Ind., were appointed a committee by the President to conduct the President elect to the chair, who, after being introduced by Dr. Thompson, thanked the Society for the distinguished honor conferred upon him.

At 11:30 A. M., there being no further business before the Society, a motion was made and carried to adjourn, to meet again on the third Tuesday in October, 1877, in the city of Evansville, Ind.

Thus closed in peace and harmony one of the most pleasant and profitable medical conventions that has ever met in the West or South. We feel safe in saying that for medical talent, industry, energy, and earnest work, the Tri-States Medical Society of Illinois, Indiana, and Kentucky will bear favorable comparison with any similar organization in the United States. May its members "live long and always be happy."

J. W. SINGLETON, M. D., Paducah, Ky.

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## ORIGINAL CORRESPONDENCE.

"Sit mihi Fas scribere audita."

LONDON, ENG., December, 1876.

*Dr. E. S. Gaillard:*

Dear Sir,—Sir James Paget, Consulting Surgeon to St. Bartholomew's Hospital, a short time since delivered a few lectures on Podagra and its Complications. There is no more popular clinical teacher in London than Paget, and the occasions of his giving a clinique (now since his retirement from the more active work at the hospital, unfortunately of rare occurrence) is always an event, both to practitioners and students. Speaking of the

influence of gout upon syphilis, he referred especially to gouty manifestations in secondaries and tertiaries. The wondrous diversity of syphilitic phenomena were dwelt upon in the following words, which I quote *verbatim*: "How was it that in the later stages of syphilis one person had a perforating ulcer of the septum nasi; another rupial sores; another chronic synovial inflammation of the joints; and another a peculiar psoriasis of the tongue? Doubtless all these might have been derived from syphilis, but the poison had in every instance been planted in different constitutions or in different personal conditions. The great varieties that were produced in the series of syphilitic affections by the peculiar constitution of the person inoculated was too little studied in the general pathology of the disease. It might, for instance, be doubted whether syphilis implanted in any other than a tuberculous or scrofulous person would ever produce destructive ulceration of the soft parts of the nose. That form was almost certainly the syphilis implanted in the tuberculous condition, and there was a group of cases which was very characteristic of the disease implanted in the gouty. Some of this group were among cases of syphilitic periostitis. He would not say that the extremely painful form of syphilitic periostitis belonged to any special constitution of the person in whom it is found; but it seemed certain that chronic synovitis, which was associated with tertiary syphilis, was, in the majority of cases, to be found in the gouty. So too a large proportion of syphilitic psoriasis of the tongue was to be found in gouty persons; and the same was true of a considerable proportion of the later tertiary eruptions. . . . The forms that syphilitic disease assumed in its later stages depended almost as much upon the constitution of the person affected as upon the original nature of the poison itself. As regards treatment, it was often said that mercury and iodide of potass. were uncertain in their effects on the disease; such results were often due to the fact that the drugs were given without any consideration of the constitution of the patient. Large doses and long courses of mercury would do a tuberculous or scrofulous person more harm than if he received no medicine whatever. In gouty subjects, iodide of potassium in small doses and largely diluted with alkaline waters

should be prescribed. . . . The physicians of Aix la Chapelle, Wiesbaden, and other health resorts on the continent, had gained a great reputation for the cure of syphilis in its later stages. Their treatment consisted generally in the employment of mercurial inunctions, combined with the use of baths and the drinking of large quantities of alkaline and sulphurous waters. They also insisted that their patients should be much in the open air and should live on a full diet.

A prominent physician in Manchester lately made a series of measurements to determine the position of the heart's impulse in different postures of the body. He found that the relation of the heart's impulse site to the nipple in the supine posture varied from a position immediately under this point to one inch or one and one-half inch nearer to the median line of the body, but eighty per cent. of the cases in which it fell vertically under the nipple were subject either to chronic bronchitis or phthisis. In most of the cases examined there was a small movement at the impulse to the left as the patient rose to the upright position; and in some instances this occurred when there was no sinking in the level of the heart. In one case only was there a movement of the impulse to the extent of one and one-half inch towards the right side (this was a phthisical subject, and it was supposed that the man had some adhesions or loss of lung substance to account for the exception). The mean extent of the movement in the whole number of cases was three and three-fourths inches, the maximum was five and three-fourths inches, and the minimum two inches. As a corollary to the foregoing, I may quote Quain and Sharpey, who state that the heart's apex strikes the walls of the chest in the space between the cartilages of the fifth and sixth ribs, a little below the left mamilla. Dr. Sibson gives the point between the fourth and fifth ribs, and Dr. Walshe states that it beats in the fifth interspace and somewhat against the sixth rib, about midway between the vertical line of the nipple and the left border of the sternum.

One of the most troublesome and worrying cases to which a physician can be called, is the obstinate and persistent vomiting of pregnancy. Only those in whose hands effervescing drinks,

oxalate of cerium, hydrocyanic acid, etc., etc., have failed to allay the sickness, can appreciate the true value of any fresh means or methods which give fair promise of being a sure remedy in such cases. Dr. Copeman, the president of the British Medical Association, has published some more interesting observations on this subject, which, although as yet rather obscure, are susceptible of great elaboration. He has been remarkably successful in arresting severe vomiting of pregnant women by dilating the os uteri with his finger. The effects of this procedure after all the ordinary remedies had failed were almost magical. The sickness was stopped and the patients went to their full time of gestation without a single bad symptom.

The French Medical Association lately held its annual meeting. The questions discussed were mostly of a social character. A great deal of time was devoted to the consideration of infanticide in its various bearings. Child-murder is the curse of France. It is universally prevalent, and is causing such a serious diminution of the population that it must ere long engage the attention of French statesmen.

*Apropos* of the rumors of another Franco-German war, I can state as a fact that vast supplies of surgical appliances, chloroform, etc., continue to be sent to Metz and Strassburg, the frontier fortresses wrested from France in 1870.

A good example of calcareous transformation of uterine fibroid was exhibited last week at one of the societies. The tumor was sub-peritoneal, and had been converted into a large mass of calcareous matter. The liver was also found to have undergone a slight calcareous change.

Von Pettenkofer's treatise on "Cholera and How to Prevent It," has been translated into English by Dr. Hime, a provincial physician. Those desirous of reading the book can not do better than get this translation, which is published by Balliere, Tyndall and Cox.

OCCASIONAL.



YAZOO CITY, MISS., 1876.

*Dr. E. S. Gaillard:*

Dear Doctor,—I desire to introduce to the readers of your Medical Journal the advantages of the elastic truss. During the late war, when surgeons had to improvise many substitutes in their department, I was called upon by two men of the better class who showed me their home-made trusses. They wore around the hips a band made of saddle-girting, to one end of which there was attached a wooden pad of large size. These were held down by a leather perineal band. After wearing them two years they declared a preference for them over the spring truss. This induced me to try the elastic truss made by the Elastic Truss Company, 688 Broadway, New York. I have now applied over a hundred of these trusses, and watched my patients who used them since 1868, and I am convinced the profession would be pleased with them. The truss consists of an elastic band which is fastened around the body at the crest of the ilium with a large cedar pad, and is held down over the inguinal ring by an elastic perineal band. I prefer these trusses for several reasons: 1. They fit the surface closely and the pressure is uniform in any position of the body. 2. They can be worn loose or tight, as the patient may desire; the straps and buckles regulating the amount of pressure. 3. They can be worn at night with comfort, which should always be done if a permanent cure is desired. 4. They are more comfortable in all cases. 5. They are especially adapted to children, as the pressure can be regulated so as to prevent chafing. 6. They are more durable than any of the spring trusses sold in commerce. 7. The cost is not equal to that of the best spring trusses.

Truly your friend, W. Y. GADBERRY, M. D.

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NEWBERN, N. C., 1876.

*Dr. E. S. Gaillard:*

Dear Doctor,—I have recently had a brilliant recovery from poisoning by opium and chloral (patient having taken about gr. iij. morph. sul. and gr. 160 chloral hyd.), treated by injecting hypodermically 1-12th gr. strychnia. Slight tonic spasm followed in less than fifteen minutes, and the man, who but

a moment before could not be aroused in the slightest degree by energetic shakings, flagellations, etc., as if by magic returned to semi-consciousness, the dusky hue giving place to the natural color, like a cloud to a ray of sunshine. Faradism was now employed and kept up for an hour, when all the dangerous symptoms had passed away. The temperature had risen from 97° to 98°, and the pulse declined from 160 to 120. No medicine had been given before the strychnine.

Yours respectfully,

CHAS. DUFFEY, M. D.

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RISING FAWN, GA., 1876.

*Dr. E. S. Gaillard :*

Dear Sir,—Thinking that perhaps it may be of interest to you, I will furnish the facts connected with a case of opium-poisoning that occurred in my practice. The case was of interest to me from a double standpoint; first, as showing the remarkable susceptibility of some constitutions to opium; and secondly, in regard to the antagonism supposed to exist between opium and belladonna, which, in this case, was certainly doubtful.

Mrs B., a working woman, of rather delicate constitution, called at my office at 10 A. M., stating that she had a tooth extracted a few days before, and that it still continued to give pain, and that she had been unable to get any sleep for the past two nights. Upon examination, I found that she was suffering from neuralgia, and as a palliative, proceeded to give a hypodermic injection of minims viij. of Magendie's solution of morphia, which was followed by instant relief. I then prescribed the following: ℞—Sulph. morph., gr. i.; ext. belladonna, ij. M. et ft. in pills v., with instructions to wait four hours before she took the first one, and then take one every four hours. That evening at 3 o'clock I was summoned in very great haste, and arrived to find my patient in a state of profound narcotism, the pupils somewhat dilated. Under the use of the usual remedies, to-wit, coffee, strong; an emetic; stimulants, and being kept awake by walking, etc., she recovered. From her husband I learned that twelve years ago a physician had given her a dose of morphia with similar results. I should have stated

that I called for the box of pills, and found that she had taken only one. The amount of opium taken in all being viij. minims of Magendie's solution hypodermically, and one-fifth of a grain of morphia with two-fifths of a grain of belladonna by the mouth.

I am yours truly,

WICKLIFFE FRIERSON, M. D.

TULLAHOMA, TENN., 1876.

*Dr. E. S. Gaillard :*

Dear Doctor,—I have a case unlike anything I have ever before seen, which I do not know how to manage, and I call attention to it for the purpose of obtaining information in regard to the experience of others, and as to what can be done with it, if anything, and how.

The case is one of *inversion* of the nipples. Both nipples are turned inside out as near as possible. Where the nipples should be there are excavations half an inch deep and three-fourths of an inch in diameter, with the end of the nipple pointing inward at the bottom. This deformity is congenital. The woman is a multipara, and, of course, has never been able to suckle her children, which she is very desirous of doing. She is now approaching her term, and if you or any of your readers have any light to shed on the management of such a case, I would be glad to have the benefit of it, as I am very desirous, if possible, to afford her relief.

Truly yours,

D. FORBES, M. D.

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## CHEMISTRY AND PHARMACY.

"Diruit, œdificat, mutat."—HOR.

**Black Phosphorus.**—Professor E. Ritter, in a German pharmaceutical journal, says the "Boston Journal of Chemistry," states that black phosphorus is not, as has been supposed, an allotropic modification of common phosphorus. It is owing to an impurity, and usually to arsenic; although mercury and even copper, and probably some other metals, can impart to it

a similar appearance. If pure phosphorus be allowed to lie some time in a solution of arsenious acid, or arsenic, or even in phosphoric acid containing arsenic, it will, when melted and suddenly cooled, become black from the arsenic taken up: If hydrochloric acid be present, the absorption of the arsenic is greatly facilitated.

**Bell-Metal.**—A new alloy for bell-metal is proposed ("Boston Journal of Chemistry"), which does not tarnish, is less likely to crack, gives a better sound, and is much lighter in weight than the alloy usually employed for the purpose. It is prepared as follows: Nickel, one pound, and copper, six pounds, are melted and cooled. Add zinc, one pound, aluminium, half an ounce. Melt and cool. Melt again, and finally add half an ounce quicksilver and six pounds melted copper.

**Cold in its Relation to Height.**—According to some remarks of M. Martins, of Montpelier, cited in the "Belgique Horticole," the intensity of cold at night diminishes up to a certain height. This phenomenon was tested by M. Martins by placing thermometers in the Botanic Garden, and at various heights on the cathedral tower. In clear nights the increased warmth at a higher elevation is the most perceptible; in dull nights there is little or no difference. The reason of the greater injury inflicted on the lower branches of shrubs, etc., is thus accounted for.

Among other interesting results accruing from the Suez Canal, M. de Lesseps observes that it has increased the rainfall in the surrounding country to a remarkable extent; previous to 1870 rain fell only about once a year; now it falls at least twice a month.—*Ex.*

In a recent discussion at the Paris Academy of Science, M. Pasteur asserted that oxygen and light were not essential to life; he had developed life in the dark, and in an atmosphere of carbonic acid; M. Boussingault, however, thought that the influence of light was necessary to life.—*Ex.*

## REVIEWS AND BIBLIOGRAPHICAL NOTICES.

“Judex damnatur cum nocens absolvitur.”

*A Treatise on the Theory and Practice of Medicine.* By JOHN SYER BRISTOWE, M. D., Lond., F. R. C. P., Physician to St. Thomas' Hospital, Joint Lecturer on Medicine at the School, and Examiner in Medicine to the Royal College of Surgeons; formerly Examiner in Medicine to the University of London, and Lecturer on General Pathology and on Physiology at St. Thomas' Hospital. Edited with Notes by JAMES H. HUTCHINSON, M. D., one of the Attending Physicians to Pennsylvania Hospital, Physician to the Childrens' Hospital, Philadelphia, etc. Philadelphia: Henry C. Lea. 1876.

The reader will see at a glance over this caption that the author, if not successful as an author, has at least enjoyed sufficient opportunities for having become so. On reading the work, it will be manifest that these opportunities have been honestly and efficiently employed. As Dr. Bristowe is a stranger in the field of authorship as seen in this country, the Public should examine with some care the titles appended to his name to learn with what degree of confidence he is to be received, and the extent of the experience enjoyed by him prior to his claims as an author and an authority. Having satisfied a natural curiosity thus far, every one will desire to learn next what are the reasons which actuated the author in presenting himself before the Public, and in his presentation what has been the form or method selected by himself.

It is fair to say that Dr. Bristowe intended this work chiefly “for the junior members of the profession and for students,” and if there be anything deficient in the extent of the erudition displayed, or in the literary scope manifested in any department of the work, that this may be justly attributed not to a deficiency of knowledge on the part of the author, but rather to his intention of suppressing all not germane to his subject, and limiting himself to the discussion only of what was absolutely necessary in a practical exposition of his subjects. And while he has done what he really intended to do, viz., presented every subject with all possible conciseness and brevity, there is nothing to warrant the conclusion that such a result is due to any want

of that thorough preparation and knowledge requisite in a work of greater amplitude and pretension. Indeed, the experienced and candid reader will testify that there are no real evidences of the fact that this work is adapted only to the wants of junior practitioners and students; on the contrary, while the style is concise, it is polished, and conveys, as a rule, what would be demanded by the most experienced practitioners; while the number and variety of the subjects discussed is really astonishing.

The arrangement of the subjects presented is entirely arbitrary, and, beyond the author's explanation, the reader can see no special reason for the sequences of subjects observed in the chapters. This is really no objection to the work, or if it is, it is an objection common to nearly all works on Practice. Each method adopted is arbitrary, and certainly does not rest on any scientific rules of demonstrable force or necessity. Besides this fact, a work on Practice is seldom or never read sequentially; each chapter is read when the occasion for consulting it arises, and if the work is furnished with a really good index, the reader is absolutely independent of the author's views as to the proper method of arranging and presenting his subjects. Thus much is said here to show that the arbitrary arrangement adopted by this author is only an illustration of a general rule, and, per se, is a matter of no consequence whatever; however much may be the importance attached to this subject generally. As some regard this matter differently, it is only just to the author to say that he has thus arranged his work:

Part I is devoted to general pathology, and in this the author discusses the following subjects: The etiology of disease physiological processes in health, physiological processes in disease, atrophy, degeneration, necrosis, mechanical and functional derangements, the treatment of disease, subdividing this portion into treatment by hygienic measures, by prophylactic treatment, and by remedial and therapeutical treatment.

Part II.—In this portion of the work he discusses special pathology, presenting for study not only the diseases discussed in every work on the Practice of Medicine, but a very large number rarely seen described unless in works devoted to special

pathology; in this connection may be mentioned his chapters on diseases peculiar to women, on tumors, syphilitic diseases, rare diseases of the skin, etc., etc.

This is, indeed, a distinguishing peculiarity of this work, and while those having large libraries may not be specially profited by it, others having a limited number of books will find it especially welcome and valuable.

The portions of the work devoted to general pathology are particularly excellent, and the description and classification of tumors is unsurpassed by any volume in the library. Indeed, this portion of the work is so excellent that if the remainder were a failure, it would render the volume exceptionally valuable. Those who have sought for lucid and practical descriptions of morbid growths, and found their researches so generally unsatisfactory, will hail with especial pleasure the successful contribution made by Dr. Bristowe to this department of medical literature. The clinical phenomena of diseases are particularly well described, and the method of diagnosis exceptionally excellent. The author regrets that he has not been able to quote illustrative cases, but as this would have been only at the expense of matter presented, no one will regret this fact. It is true that all who are familiar with the welcome method of learning through the medium of well-reported cases, will appreciate the fact that the omission of cases robs this work of a value that no one can justly deny; it is also true that those who have enjoyed the beautiful reports of cases which adorn the pages of Watson, and Trousseau, and Graves, and Reynolds, etc., would have been glad to see in Bristowe's Practice illustrative cases; but if this could only have been done at the expense of matter already introduced, every experienced student will prefer to accept the work as it is published.

In regard to those portions of this volume devoted to treatment, the profession will hold contrary opinions. There is no formula-writing to be found; but little of measurements of doses; equally little of that matter which, properly belonging to works on *materia medica*, disfigure the pages of so many volumes on the Practice of Medicine. The author has preferred to teach pathology and principles, assuming that the reader

is sufficiently educated in materia medica and therapeutics to adapt medicines and their doses to the morbid conditions represented. As is well said by the author, "the practitioner is far more likely to make a thoughtful physician and to benefit his patient if he adapts his drugs and his methods to the exigencies of the case, than if he follow the stereotyped procedure of some predecessor." Criticism in detail is unnecessary, and indeed in the short space enjoyed, it is really impossible. The reviewer has preferred rather to present the general peculiarities and distinguishing features of the work and to indicate those portions of it that are exceptionally excellent. It is a most excellent volume, and will be fully prized by all who possess a copy of it. The American editor has really improved the volume by his additions to it, and deserves warm commendation for his faithful and efficient labors. Mr. Lea has excelled himself in all that appertains to excellency of material, accuracy of work, and faultlessness of issue.

On Coughs, Consumption, and Diet in Disease. By Horace Dobell, M. D., F. R. M. C. S., etc. Philadelphia: D. G. Brinton. 1877.

Principles of Human Physiology. By William B. Carpenter, M. D., F. R. S., F. G. S., F. L. S. A new American from the eighth revised and enlarged edition. Philadelphia: Henry C. Lea.

The Functions of the Brain. By David Ferrier, M. D., F. R. S., etc. With numerous illustrations. pp. xv., 323. New York: G. P. Putnam's Sons.

The Physician's Visiting List for 1876, by Messrs. Lindsay & Blakiston, Philadelphia, is now to be had at the book stores. This list has proved so convenient and useful to the medical practitioner heretofore that a large edition will be called for.

Proceedings of the Medical Society of Kings County, Brooklyn, New York. November, 1876.

Spinal Irritation; its Pathology and Treatment. By William A. Hammond, M. D. One of the series of American Clinical Lectures. Edited by E. C. Seguin, M. D. Vol. II, No. X. New York: G. P. Putnam's Sons. 1876.



Points in the Surgery of Children. No. IX of Vol. II of the Series of American Clinical Lectures. By J. H. Pooley, M. D. New York: G. P. Putnam's Sons.

Annual Report of the Surgeon-General of the U. S. Army for 1876.

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## MISCELLANEOUS.

"Non omnes eadem mirantur ament que."

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**A Case of Congenital Chorea.**—In the "Wiener Medizinische Wochenschrift," Dr. Frank Heller relates the following case: A woman who was somewhat anæmic, but otherwise in fair health, was delivered of a male child about the middle of the eighth month of pregnancy. The child appeared weak and pale, and the anterior fontanelle was much depressed. Almost immediately after birth it began to be affected by clonic spasms, affecting the muscles of the head, trunk, and limbs equally. The motions consisted of frequent extensions and flexions both of trunk and limbs, rolling of the eyes, contortions of the face, and protrusion and drawing in of the tongue. They were quite continuous, except during deep sleep, or when the child was in a bath. During light sleep they persisted in a minor degree, and continued even while the child was drinking. The infant was fed artificially, but rapidly increased in weight and strength. After some days it began to suffer from nasal catarrh, which recurred every night about 12 P. M., lasting about an hour, and much impeding the breathing. Quinine was then administered, with the result that these attacks became milder, without disappearing, while the choreic movements rather increased in strength. Chloral was then given twice a day, and had a very beneficial effect in diminishing the violence of the chorea, and procuring long remissions, while the nocturnal catarrh ceased after two days. The movements, however, did not entirely cease until the child was two months old, the rolling of the eyes being the symptom which persisted

longest. The child afterwards did well, and at the age of fifteen months was in good health. There was no family history of any nervous complaint. Of similar recorded instances, the author finds only two of congenital chorea, one by Mayo ("Outlines of Human Pathology," p. 170), and one by Monod; also one case mentioned by Constant, in which chorea occurred at the age of four months. Most authors declare that it does not occur in children under the age of one year.—*Obstetrical Jour. of Great Britain.*

NOTE.—How does this report affect the theory of Dr. Stevens (of Albany, New York), that chorea is due to vices of refraction and accommodation?—E. S. G.

**A Patient who Washed out his own Stomach.**—He has two or three vessels of hot water, holding nearly a pint each, near him, and drinks one of them. He then introduces the oiled tube, whilst sitting; he then stands up, bends forward the upper half of the body, and lets some of the water run into a basin. Then he drinks the second glass, repeats the manœuvre with the tube, and continues till the fluid comes back clear from the stomach. He takes account how much goes in and how much comes out. In general the latter exceeds the former. This treatment has done him good; his appetite is better; the bowels are regular, and his strength improved, so that he can walk for an hour comfortably. He takes baths of the Neckar water, and is gaining weight. He is so fond of the tube that he takes it with him in travelling. He overcomes the difficulty caused by the cricoid cartilage projecting behind by drawing a deep breath. The introduction of the tube no longer gives him pain.

If the lateral openings be stopped up, he simply withdraws the tube, cleanses it and puts it in again. It is an English tube, with an olive-shaped end. It must be well oiled. He thinks, perhaps correctly, that he would not have suffered so much if the tube had been used earlier in his complaint. Dr. Betz proposes to try electricity in this case if the stomach does not show some power of contraction upon its contents in a reasonable time. There is no tumor, but very probably callous

thickening of the pyloric end. It is interesting to note how quickly the removal of the acid contents relieves the pain, so that it seems likely that there is a direct irritation of the nerve-terminations in cases of this kind. However, he says the object of his paper is not to describe the pathology of this patient's dyspepsia, but rather its therapeutic technology, "the remarkable thing," as the patient calls it, of his success in washing out his own stomach.—*Lond. Med. Rec.*

**The Clinical Society.**—The Council of the Clinical Society has decided to appoint two special committees; one to inquire into the incubation period of scarlet fever, diphtheria, erysipelas, and typhoid fever; the other to ascertain what deleterious effects follow the prolonged and continuous use of chloral in ordinary doses. The gentlemen who have been requested to serve on these committees are: On the incubation period, Sir W. Jenner, Drs. Murchison, Cayley, Shirley Murphy, Broadbent, and Buchanan; on the action of chloral, Sir W. Jenner, Drs. John Harley, Ringer, Barlow, Andrew Clark, and Buzzard. The Society is to be congratulated both on its decision and on the selection of members made.—*Lancet.*

**Indican.**—The formation of indican, which is found in normal urine in small amount, and to a greatly increased extent in some pathological urines, from indol which is formed during the pancreatic digestion of albumen, has been previously mentioned ("Boston Medical and Surgical Journal"). Nencki ("Berichte der Deutschen Chemischen Gesellschaft") does not consider that the pancreatic fluid is at all necessary for the production of indol from albumen, since Hüfner found that, when albumen was treated with pure pancreatic ferment in such a manner as to entirely exclude all organisms, no indol was formed, but on the other hand it was formed by merely allowing a solution of albumen to stand exposed to the air without the addition of any pancreatic or other animal tissue. He therefore considers that the indol is a specific product of the putrefaction of albumen by the formed ferments, and that the presence of indican in the urine during starvation, as was shown

by Salkowski ("Berichte der Deutschen Chemischen Gesellschaft") does not prove that it is formed within the system by the soluble ferments, since germs of the lower organisms exist not only in the pancreas, but also in the liver, muscles, and other tissues.—*Bost. Med. and Surg. Jour.*

Albrecht, in the "Petersburger Medizinische Wochenschrift," reports five cases of supernumerary semi-lunar valves of the heart, two of which were of the aortic and three of the pulmonary valves. The number of valves in each were four, of which three were of the normal size, while the fourth appeared considerably diminished. In one case only, two pulmonary valves were half as large as the two others.

**An Epitaph—Use and Ornament.**—When Sir John Carr was in Glasgow, about the year 1807, he was asked by the magistrates to give his advice concerning the inscription to be placed on the Nelson monument, then just completed. Sir John recommended this brief record: "Glasgow to Nelson." "Juist so," said one of the baillies; "and as the town of Nelson's close at hand, might we no juist say: 'Glasgow to Nelson, sax miles,' an' so it might serve for a monument an' a milestone too."—*Exchange.*

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## OBITUARY.

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[From American Journal of Obstetrics.]

PROFESSOR GUSTAV SIMON was born at Darmstadt on the 30th of May, 1824. He was educated at Heidelberg and Giessen, taking his medical degree at Giessen. He then accepted the position of military surgeon at Darmstadt. While here, he visited Vienna, Paris, and London for scientific observation. In 1861 he was called to Rostock, where he became professor of clinical surgery and director of the hospital. In 1867 he was chosen professor of clinical surgery in the University of Heidelberg, which he retained till the day of his death. He was repeatedly invited to other universities, but preferred to remain at Heidelberg. In 1866 he was director of the Military Hospital at Moabit near Berlin. In the late Franco-Prussian war he was surgeon-general of the Reserve Barracks of the Grand Duchy of Baden.

In 1851 he published his first treatise on "Gunshot Wounds," containing the results of experimental researches, with original views on the subject.

In 1854 he published a "Description of the Operation for Vesico-vaginal Fistula." In 1862 he published more extended observations on the same

subject. And the last paper he wrote was on vesico-vaginal fistula, published only a few weeks before his death. (In this number.)

In 1868 appeared his "Communications from the Surgical Clinic of Rostock." They contain a long series of original observations, with some "New Methods of Operating in Cases of Incurable Fistula," also "Double Puncture and Subsequent Incision in Cases of Abdominal Echinococcus and Hydro-nephrosis," "The Pendulum Method for the Reduction of Dislocated Humerus," "Kolporaphia Posterior for the Cure of Prolapsus Uteri," "Operation for Ruptured Perineum," "Contributions to Plastic Operations of the Face, Vagina, and Rectum," "Hare-lip and Cleft-palate," "On Covering Amputation and Resection Wounds with Diseased and Perforated Skin Flaps," "Treatment of Malignant Disease of the Vagina, Bladder, and Rectum by the Curette, and the Methods of Exposing them sufficiently to View by Using the Sims' Speculum for the Vagina and Rectum."

Among his last contributions to surgical science is his "Method of Rendering the Female Urinary Bladder accessible, and on Probing the Ureter in Women," a paper which, in the short space of six months, has appeared in four different languages. His "Manual Palpation of the Rectum, etc.," is now known and adopted by the Profession all over the world. He finished the second part of his great work, on "The Surgery of the Kidneys," but a few days before his death. The third and last part will be laid before the Profession in an unfinished state.

Until the last day of his life, he was busily occupied with the arduous duties of his profession.

The foregoing resumé of Prof. Simon's labors was furnished by his friend and pupil Dr. A. C. Bernays, of St. Louis, Mo., now in Heidelberg.

When in Europe, last summer, I made a visit from Paris to Germany especially to see Köberlé at Strassburg, and Simon at Heidelberg. At Baden, I telegraphed to Simon, to know if he was at home, and received as answer: "Yes. Very ill, but most happy to see you." Arriving late, I went to see him at 9 P. M. He was in bed, and received me most cordially. I remained but a short time, but in ten minutes he arranged a day's work, to begin at 9 the next morning. On my arrival, next morning, I found several young doctors and many patients in the ante-chamber. Simon gave me a real clinical lecture for more than three hours, illustrating his method of operating for vesico-vaginal fistula, lacerated perineum, for exploring the female bladder, probing the ureters, and for exploring the abdominal cavity, by passing the hand into the rectum.

It was a hard day's work for a man in good health. But he did not seem to think of himself for a moment. He was wholly absorbed by the pursuit of science for the relief of humanity. His genius, learning, industry, and skill are known and recognized by the Profession everywhere; and we call him great. But his qualities as a man could only be realized by personal contact. His earnestness and enthusiasm, his sincerity and honesty, his generosity and kindness of heart, impressed all with the conviction that he was one of the best of men.

I spoke to him of his health. He supposed he had emphysema, with some congestion of the lungs. He was not aware of his real condition, though it was well understood by his friends.

The propriety of withholding from such a man the gravity of his disease seems to me questionable.

He died on the twenty-seventh of August last, of an acute attack of œdema of the lungs, caused by an immense aneurism of the pars descendens of the thoracic aorta, which had greatly compressed the lower half of the left lung and pulmonary veins. The circumstances of his death are curious and interesting. One of his favorite assistants, Dr. Bernays, called, on the morning of the 27th, to read to him the translation of his paper on vesico-vaginal fistula, which he wished to see published in America. He expressed himself as well pleased, and Bernays was about to leave, when Simon, who was in bed, called him back, and said: "Don't forget to send my needle-holder and some needles

to Mr. Marion Sims, and tell him I shall go to the Congress of Gynæcologists in America if my health improves."

This was but twelve hours before his death.

At 4 P. M. Dr. Braun, his first assistant, called to report the condition of patients whose after-treatment he was conducting in the hospital for Simon. Simon gave him instructions about having some important cases ready for operation at 11 the next morning. Dr. Braun left at 6 P. M., and he had passed but a few steps from the villa, when Simon was taken suddenly with dyspnoea. He raised up in bed, ordered some one to open the window and call Dr. Braun, who hurriedly returned, expecting to find his friend and teacher dead. Simon requested him to call a carriage and go for his tracheotomy instruments as soon as possible. Braun obeyed, and returned in twenty minutes with Dr. Haek. Simon now said: "Operate quickly; perform high tracheotomy." He refused to take an anæsthetic. Dr. Braun operated as quickly as possible. The veins of the neck were greatly distended, and there was consequently some trouble. Simon still hurried him on. There was a good deal of venous hæmorrhage, which had to be controlled before the canula could be introduced.

Prof. Simon then said he felt easier, and breathed freer. His pulse kept up till 10 o'clock, when there was a sudden collapse, and he died about midnight. And thus passed away one of the great lights of medicine.

The name of Simon was as well known and as highly honored among us as in his own fatherland. Science knows no boundaries. It is cosmopolitan, and its votaries all over the world are linked together in a common brotherhood. The success of one is the glory of all. The loss of one is a loss to all. Had Simon been an American, we could not have felt his death more keenly, nor mourned him more sincerely.

For a quarter of a century he has been prominently before the Profession, and always as the standard-bearer of an onward movement. His name is the synonym of progress, and his fame will endure for ages. J. M. S.

## MEDICAL NEWS.

'Nulla dies sine linea.'

*Delay* in obtaining the "cuts" for the valuable article of Simon, published in this number, has delayed the issue for more than a week; the lost time will be made up by punctual issues hereafter.—*The Reign of Law*.—Thirty-two medical students were arrested at St. Petersburg, Russia, for political agitation against the government.—*The* next meeting of the British Medical Association will take place in August next at Manchester, Dr. W. A. Eason Wilkinson, of Manchester, Eng., will be President.—*Claude Bernard* has just received the celebrated Copley Medal for his recent contributions to physiological science.—*The* French Academy of Medicine and Surgery at Bordeaux, France, offers a prize of 1,000 francs for the best essay on the microscopical examination of human blood,

both in its fresh and dry state, as compared with the blood of animals.—*Dr. F. P. Porcher*, of Charleston, S. C., is to deliver the next "Toner Lecture" at Washington, D. C.—A new idea and a good one in mirrors used in laryngoscopy is to brush them over lightly with a little glycerine. The watery vapor of the breath is immediately dissolved, and no cloud appears on the surface of the mirror.—A Bureau has been established in France for analyzing all suspected wines; a terror to the dishonest merchant.—Valuable geological pictures of the interior of coal mines are now taken by means of the calcium light.—*Past and Anticipated Fertility*.—Pogson, the Government Astronomer at Madras, has had no difficulty in naming his many children; he names them after the planets, old and new. He regards Venus, Mercury, etc., both telescopically and paternally.—*Silkworms* are now hatched by electricity; it accelerates the hatching process by ten days, and the yield is forty per cent. The negative current is used for ten minutes. Chickens as well as telegrams for breakfast are next to come to the Public over the wires.—The demand for the American peanut oil for table and culinary purposes is becoming enormous. Waste places may now be made highly profitable. Idlers should go to work.—*Infectious* diseases, it has been discovered, are propagated through the medium of circulating libraries.—*Moritz*, of St. Petersburg, describes a fatal case of hydrophobia produced by the bite of a non-rabid dog.—The British Habitual Drunkards' Legislative Association is progressing successfully and rapidly; legislation on this subject is respected and commended.—*M. Blot*, of Paris, has recently communicated a paper on the successful use of chloroform in two cases of primiparous labor. Such papers are read in American medical societies every month, and this has been the case for years.—The Turkish Government has accepted the provisions and laws of the Geneva convention in regard to the treatment of the sick and wounded; the Geneva cross included.—A chair of homœopathy was recently inaugurated at the University of Buda-Pest. The audience at the commencement of the exercises consisted of six. These soon left. The audience as well as the chair was homœopathic.—*Dr. Gutterbock* ("Virchow's

Archives") has recently removed from the bladder of a woman a calculus of pure cholesterine.—*The* Supreme Court of Minnesota has just rendered a decision sustaining the constitutionality of the inebriate asylum law, by which a tax of ten dollars per annum is levied upon each saloon-keeper and trafficker in liquor for the maintenance of asylums for inebriates. Is not this a good solution of the difficulties surrounding this question?—*Savannah* had, it is believed, a population last summer of 32,000; 10,000 left during the yellow fever epidemic; there were about 1,200 deaths.—*The* infant mortality of Calcutta is appalling; 480 per thousand.—*Detecting* diseased bone by percussion is the latest surgical novelty.—*The* London Medical Society at its last meeting resolved that females are not eligible as members.—*At* the last (November) commencement exercises of the University of the Pacific, California, there were twenty graduates.—*One* of the museums at Vienna has been found to contain the skeleton of a human being eight feet high.—*Dr. Roberts Bartholow* has become the owner of the "Cincinnati Clinic." He will doubtless make it even a better and more popular journal. It is much improved.—*Another* Western medical college in Indiana, at Fort Wayne; one more also at Nashville, Tenn.

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## EDITORIAL.

"Nullius addictus jurare in verba magistri."—Hoz.

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Volume **XXIII**.—The first number of this volume is now presented to the profession. Its unusual size and the delay in receiving the plates which illustrate it, have prevented an earlier issue. As the subscribers, however, are the gainers, both in the quantity and quality of the matter furnished, it is hoped that they will regard with leniency this apparent irregularity.

It is customary and perhaps appropriate that a few words should be addressed to the readers of a journal on the commencement of a new volume.



It is but proper to acknowledge that in the volume just closed, as in all which have preceded it, there are many errors of judgment apparent; errors of omission and commission. These are a part of the past and beyond control, yet they constitute, it is hoped, a part of that experience which develops a better conception of editorial duty and greater care in the discharge of it. With the commencement of a new volume and a new year, however, every one who stands before the professional Public endeavoring to discharge the duties of an editor is expected to do more than simply acknowledge the errors of past management; for this Public has the right to know what is to be the character and policy of a work which they are called upon to sustain.

It is safe to assure the reader that never since this Journal was originated has there been such a certainty of valuable contributions for the original departments of the work. The most experienced writers and practitioners and veteran teachers in different portions of the country have been kind enough to pledge their support. The original department of the Journal then will be better than it has ever been before.

The review department will be represented by several writers of long experience; sound critics, and safe guides. The many new volumes received will be carefully and profitably reviewed, and this portion of the Journal will be conspicuously improved.

Reports of prosperous and distinguished societies will, as heretofore, be published throughout the year.

The correspondence department will include informal and valuable letters from the subscribers and the general professional Public, and in most if not all of the numbers, there will be found one or more letters from the chief medical centres of Europe.

As the exchange list has been increased, the selected matter will be made from a wider and more valuable field; these selections will, as a rule, be made from original copies of foreign journals, and not be taken from home publications; while the original departments of American journals will be carefully examined and valuable matter presented to the reader.

Arrangements have been made for a series of clinical reports,

and these will certainly add much to the interest and value of the Journal.

The news department will, as heretofore, contain items of foreign and domestic intelligence, and will, it is believed, keep the reader fairly informed of new and interesting facts.

The editorial department will be conducted with that greater care and better judgment which maturer experience should induce. It will manifest always strict impartiality and independence. Personalities and partisan topics will, under all circumstances, be excluded, while subjects interesting to the professional mind and questions affecting the professional welfare, will receive faithful and constant attention.

Each number of the Journal will be made up in the interests of the profession *at large*, and it is hoped that all physicians will feel that the pages of the work are freely and impartially opened to them.

With an experience of over eleven years, the editor believes that he has learned much as to the demands and desires of professional readers, and he has endeavored in these brief explanatory statements to indicate what will be the future course and management of this Journal. If a work thus made up and managed will be satisfactory to his brethren, he will, as heretofore, be glad of their encouragement and support.

**Law and Medicine.**—The harmonies and antagonisms of medicine and law are in modern times, as they have always been, frequently and conspicuously manifested. Of the first, there is nothing to be said at the present time; the object of this notice being to direct professional attention to an interesting illustration of the last, a very decided antagonism occurring between the representatives of these great sciences.

According to a recent Texas law requiring the examination of all persons undertaking to practice medicine, it seems that the members of the Medical Examining Board for each Judicial District are appointed by the presiding Judge. It further appears that the district in which Austin is located, Judge E. B. Turner, in making up the Medical Examining Board, has undertaken to appoint a homœopathic physician; and that the

members of the Board and the physicians of the district have very properly resented this virtual evasion of the law; this unwarrantable trespass upon the rights of the Profession, and this judicial trifling with the interests and the claims of medical science. These several charges are indisputably true.

Judge Turner directly evades the law which he knows was written by regular physicians, originated by them and enacted by the Texas Legislators, with the distinct understanding on their part that the "physicians" on the Board should be of the faith represented by nine-tenths of the medical advisers of their families. To place any other construction on the law is to make the Legislature of Texas a conniver at deception and a party to a distinct fraud. No judge worthy of legal or personal respect can deliberately violate the spirit and intention of a law because in its text he finds, by a quibble unworthy of a "shyster," an opportunity for doing so. The origin, the intention, and the meaning of the Texas law are beyond question.

Judge Turner commits a direct trespass upon the rights of the Profession by his course. The Legislature of his State recognized and gave to the regular Profession who originated and framed this law that distinct position which, without exception, is accorded to it by the nationalities of the world. In France or Germany or the British Empire or the United States, the term medical profession confessedly means physicians who have, by schools and practice, represented medicine from a period five hundred years before the birth of Christ to the present time. If a judge includes in this term the representatives of one admitted sciolism, he must admit those of all others; hydropathy, oinopathy, kinesopathy, mesmerism, Thomsonianism, etc., and make medicine and the medical profession to mean the acts and deceptions perpetrated by every representative of peripatetic and local imposture.

Judge Turner trifles with the rights and claims of medical science; for what medical science, as recognized by the great nationalities of the world and their jurisprudence, really is, Judge Turner ought to know, if he does not; and ignorance can not be excused either in the violation of or construction of law.

By his present course, then, he evades the manifest intention

and spirit of the law; and if in its text he finds that he can do this with impunity, such a course is a disgrace to the judiciary of a great State, and worthy only of the disreputable legal Arabs who infest the purlieus of legal courts. He trespasses upon the rights of the profession and trifles with the interests and claims of medical science. By parity of such reasoning as he sets forth, he might place upon the Medical Examining Board Thomsonians, hydropaths, and homœopaths, and before such an iniquity summon the physicians of his district for examination. As to his plea that he must respect the "Bill of Rights and the Constitution," and "repudiate monopolies," etc., this is simply the plea of the demagogue.

If a State passed a law that clergymen must be examined by a Board of Clergymen before having a license to preach, and any judge having "a little brief authority" conferred upon him (under the assumption that he had at least common sense) were to force clergymen before a Board of Mormons and Spiritualists and Swedenborgians, he would be tarred and feathered by an indignant people, and he would receive exactly what he deserved; even though he was devoted to the "Constitution and the Bill of Rights," etc. So in his own profession, if candidates to practice law were forced before a Board composed of those who recognize as the true code of law the laws of the Medes and Persians, or that supplanted by the Napoleonic code, or the code of common law, he would be the laughing stock of civilized nations.

It is useless to argue with a demagogue; one wholly unfit and unable to construe the intention of a law; who repudiates equity, and even common sense, under the paltry plea of his love for "the Constitution and the Bill of Rights," etc.

The true course is for the physicians of the United States to come to the deserved aid of their Texas brethren, and by resolutions and statements, make odious and ridiculous the conduct of a paltry demagogue who wishes to defile and insult a learned profession. He should be made the object of a legal suit, and proved to be the unquestionable violator of the spirit and intention of a law intended for the safety and welfare of his own people. Meanwhile, every one practicing physic in that dis-

trict should refuse to appear before Judge Turner's Board, and if held to legal accountability, should have the case tried before a competent tribunal. It is safe to say that no judge or lawyer of common sense, and no jury of sane men would fail to sustain the profession and make Judge Turner the laughing stock of his county, for no judge has ever thus construed similar laws.

It should be clearly understood that the Texas law, though framed and obtained by regular physicians, is not in the interests of any particular school, and does not affect any physician because of his peculiar views of practice. Each applicant is required to be proficient in anatomy, physiology, chemistry, surgery, and obstetrics, branches accepted by all schools; the applicant is not required to pass an examination on materia medica, therapeutics, or the practice of medicine. A most liberal and unexceptionable law.

Finally, Judge Turner, an officer of the law, and sworn to uphold the law, is endeavoring, by all means in his power, to compel the physicians of his district to violate their own highest law, the code of ethics; and if this code, like all codes, be imperfect, this, at best, is a plea equally tenable against all codes; but it is unquestionable that every physician is tacitly bound to uphold it and be governed by it. That the highest officer of the law, under the specious plea indicated, should be endeavoring to force those among the best citizens of the State to violate laws held by their profession to be inviolable, is a spectacle offensive to every true lawyer, and equally offensive to every citizen of common justice and common sense.

The names of the Texas physicians endeavoring to resist this judicial usurpation are as follows: J. W. McLaughlin, M. A. Taylor, J. Cummings, T. D. Wooten, R. M. Swearingen, J. M. Litten, A. E. Carothers, B. Hadra, W. J. Matthews, W. J. Burt, J. W. Stallnaker, W. A. Morris, W. H. Tobin, J. P. Weisselberg, and B. Graham. All society resolutions or proceedings addressed to any of these gentlemen at Austin, Texas, will be well and promptly used in the maintenance of the rights of the medical profession.

RICHMOND AND LOUISVILLE

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## ORIGINAL COMMUNICATIONS.

“Qui docet discit.”

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**ART. I.—***How Thirty-five Consecutive Amputations were Successfully Treated a Century Ago.* By STEPHEN SMITH, M. D., Surgeon to Bellevue Hospital, New York.

Edward Alanson, Surgeon to the Liverpool Infirmary, writing in the year 1779, makes the following remarkable statement: “I have operated in thirty-five cases, such as promiscuously occurred at the Liverpool Infirmary, without the loss of a single patient.”

There is scarcely to be found in the records of surgery a more incredible announcement than that of Alanson to the surgeons of a century ago. It was an assumption of successful practice that in the very nature of things could not be believed. How Potts, Hunter, Monroe, and Bromfield received the statement we have no knowledge; but from the explanatory remarks of Alanson, we can readily discover the course of current or anticipated criticism. One suggested that Alanson must have carefully selected his cases, to whom he replied: “I have never refused to operate upon any case that has presented where a single person in consultation has thought such operation advisable.” Another inquired as to the usual “fever and spasms,” which always then complicated the cure. Alanson replied: “The symptomatic fever, the startings and spasms,” have in all been slight. A third remarked that his method of dressing must have been excessively painful. Alanson responds: “The pain

of dressing was slight." A fourth inquired as to his method of dealing with the discharges. He answered: "There was too little discharge to give the slightest trouble." A fifth brought forward the most serious complication of amputation wounds of that day, viz., hæmorrhage, and desired to know how he managed that. Alanson replied: "There has not been a necessity to remove the dressings on account of hæmorrhage in a single instance." A sixth inquired as to his management of the exfoliation of bone—an almost universal termination of amputation. Alanson said there was "not the smallest exfoliation, except in the case of Mary Jones." A seventh asked him what he meant by "cured." Did these wounds after all heal? He replied: "At the expiration of a month from the operation the wound has either been perfectly healed or less than a sixpenny piece in all the wound has been ultimately cured, and the cicatrix remarkably small." An eighth believed that, after all, Alanson's patients must have the stumps of the period, viz., conical or sugar-loaf, and excessively tender. He answered in effect: "Stumps healing without suppuration or exfoliation are not tender, and in illustration he showed cases with little or no tenderness, and cites one patient, a sailor, who walked firmly on the end of a leg-stump, and could perform all his duties with the greatest ease." The question was doubtless also asked, did not Alanson operate under more favorable circumstances than other surgeons? That question he answers in a long category of complications which he witnessed apparently in the very infirmary where he met with such remarkable success. That he was fully alive to the dangers of foul air of hospitals and crowded resorts of the sick, he gives many proofs. To this source of poison he attributes many of the evils which beset amputation wounds. In one instance he removed a patient on whom he had performed amputation from the infirmary during a very severe attack of erysipelas, believing that death would follow if the sick man remained in the bad air of the ward. He not only removed him from the ward, but had him taken to a small new building in the suburbs of the town, after being bathed and supplied with entirely new and clean clothing. The result was an immediate improvement and prompt

recovery. There are many evidences that he and other leading surgeons of his time were more alive to the dangers of the air of hospitals than the surgeons of to-day.

The writings of Pringle, detailing his experiments on the poisons of the air, and embodying his observations on the diseases of the army, had awakened the liveliest interest among surgeons. These explanations were doubtless even more incredible than the general claim of such marvellous success in saving his patients. It was possible to have a given number of consecutive recoveries, but that these patients should recover with none of the ordinary symptoms was the climax of absurdity. Alanson and his "improved plan" of amputation, as he styled it, was condemned by the average surgeon of the period.

In order to fully appreciate the claim of Alanson, we must have a correct understanding of the state of this branch of surgery anterior to and at the time of his writing.

With but few exceptions the antecedent history of amputations presented an unbroken series of methods of covering the stump with granulation tissue. From the earliest periods to the middle of the fifteenth century amputations were performed, as a rule, only for mortification. During most of that long period but slight efforts were made to aid Nature in accomplishing this tedious process, as surgeons were excessively afraid of hæmorrhage. The rule which they scrupulously followed was never to cut sound parts. At various times bold operators cut the dead tissue, and so encroached upon the living as to cause hæmorrhage, which was promptly suppressed by boiling oils or the cauterly. Some, in their anxiety to assist and hasten the process of separation, made clean amputation with red-hot knives; others resorted to the ligature and removed limbs by strangulation. By all these methods amputation was rendered a most dangerous proceeding, and even when it terminated in recovery the stump was a conical protuberance, the most prominent part being the bone, covered with a thin, tender cicatrix, formed of feeble granulations.

Even when surgeons began to control hæmorrhage during operations by the application of bandages and ligatures to the limb, thus enabling them to divide the soft parts safely, the



permanent arrest of bleeding by the application of the cautery to the face of the stump did not greatly improve the results. The cautery necessitated profuse and long-continued suppurations and necessary destruction of tissues, with exfoliation and all its attendant disastrous consequences.

But the substitution of the ligature for the cautery by Paré formed a real era in improved amputations. The amputation wound was, by this method, left comparatively free from those local conditions which hitherto had seriously interfered with healing. Paré seems also to have attempted to form flaps which would cover the end of the stump, and secure their union by sutures. But as he made a circular incision directly down to the bone and encroached as little as possible upon the living parts, the covering was scanty and the method resulted in a conical stump. Various methods of operating were devised, but in all cases the coverings were too small or irregular, and the protrusion and exfoliation of bone followed as a necessary consequence. While the number of recoveries was now far in excess of the period anterior to the use of the ligature, the stumps were by no means satisfactory. Exfoliation of bone and union by granulation were not only necessary consequences, but were regarded by surgeons as necessary results of amputation.

In 1679, just one hundred years prior to Alanson's announcement of the results of his "improved plan," another English provincial surgeon very modestly placed on record a method of operating which, in his practice, had proved remarkably successful. That record, though a short letter to a friend, and appended to a treatise on quite another subject, was the first ray of light which preceded the dawn of a new era in the history of amputations. This letter was written by J. Yonge, of Plymouth, to Thomas Hobbs, surgeon in London. He says: "I find by yours that you are surprised with the intimation I gave you of a way of amputating large members, so as to be able to cure them, *per symphysin*, in three weeks, and without fouling or scaling the bone. It is a paradox which I will now evince to you to be a truth, after I have first taken notice of what you affirm, that there is a necessity of scaling the ends of those bones left bare, after the usual manner of dismembering, before the stump can

be soundly cured; that you never yet found it otherwise, but that where it hath been attempted, the stumps have apostemated and the caries came off thereby."

From this statement it is apparent that the universal opinion at that time was that exfoliation of the bone must of necessity occur. Yonge then proceeds to give a detailed account of his operation, acknowledging, however, that the new method was suggested to him by an ingenious brother, C. Lowdham, of Exeter. He says: "You are with the catling or some long incision knife to raise (suppose it the leg) a flap of the membranous flesh covering the muscles of the calf, beginning below the place where you intend to make excision, and raising it thitherward of length enough to cover the stump; having so done, turn it back under the hand of him that gripes; and as soon as you have severed the member, bring this flap of cutaneous flesh over the stump, and fasten it to the edges thereof by four or five strong stitches."

We have in this description the first well-recognized effort to secure the union of amputation flaps by first intention. It is true that Celsus, and more modern writers, allude to the subject, but they leave the question in doubt as to whether or not they sought immediate, rather than secondary, union. Certainly no one seems to have laid such stress upon this feature of the operation and dressing as to impress his contemporaries with the belief that he aimed to close the wound at once, or by first intention.

Yonge proceeds to give in detail the advantages of his new method, the chief of which were as follows: 1. It was more speedy, the cure not occupying a fourth of the usual time; 2. There was no suppuration; 3. There was no exfoliation; 4. There was less danger of hæmorrhage; 5. The wound was far less liable to break open from slight injury; 6. The stump was much better adapted to an artificial limb. What was this method of Yonge? He simply attempted to secure primary union of the wound; for which purpose he made an ample flap, applied it directly to the face of the stump, and retained it with suitable dressings. The interesting feature of his publication is this: He claimed precisely the same results for his new

method which Alanson claimed for his "improved plan" just one hundred years later. The fact is, their methods and results were essentially the same, viz., ample coverings of the stump and primary union. Yonge was the forerunner of Alanson, and the first to announce the new gospel of this immediate healing of amputation wounds. It is not remarkable that Yonge's statements made no impression. Centuries of teaching by the great masters were not to be set aside by this hitherto unknown provincial surgeon. It is probable, indeed, that considering the very obscure method of making it public, his paper attracted little attention; yet it is apparent that there was a steady progress during the century towards the formation of more suitable coverings of the stump.

Salinger, of Amsterdam, in 1784, made a flap in amputations of the leg which so perfectly protected the stump that the patient, with a rude shoe, could walk perfectly well. Verduin and Ravaton also perfected flaps which gave good results. But for the most part surgeons clung to the old opinion that the bone must exfoliate, and they did not deem it proper, therefore, to unite the flaps, however ample they made them. O'Halloran, as late as 1766, made large flaps and dressed them separately to prevent union. The method of amputation generally followed a century ago, or when Alanson wrote, as given by Bromfield, Surgeon to St. George's Hospital, and a contemporary by what was called the double incision. An assistant retracted the skin as much as possible, when the surgeon made a circular incision down to the muscles. The skin was then dissected from the muscle a little higher; then the surgeon made an incision through the muscles down to the bone along the margin of the retracted skin. The muscles were next dissected from the bone and the saw applied. In dressing, a compress was placed on the cut extremity of the bone, the surfaces of the wound were covered with digestives, and a cap was drawn over the stump to retain the dressings.

The results of amputations at that time are given by Alanson himself, as follows:

"Previous to our improved plan, out of forty-six amputations at which I was present and had an opportunity of inspecting

the after-treatment, ten died; one of lockjaw; two of hæmorrhage from the whole surface of the stump; four from hectic fever and extensive suppurations; and three from spreading gangrene on the surface of the stump. Eighteen had hæmorrhage; six from the whole surface of the wound, and twelve from a particular vessel or vessels. In nearly the whole the symptomatic fever was violent; the startings and spasms frequent; the suppuration large; the surface of the wound extensive, and in all the first dressings were painful. In most of these there was an exfoliation; in several a sugar-loaf stump, and in some the wound remained incurable."

We now come to inquire as to the nature of this "improved plan" of Alanson which gave results not only far more favorable than were then obtained, but which were not exceeded in the century which followed.

The following was Alanson's method of amputating. He says: "I shall now bring into one view our established mode of performing the operation of amputation on the thigh, and the after-treatment, as practiced in the Liverpool Infirmity. Apply the tourniquet as usual, and let an assistant draw up the skin and muscles by firmly grasping the limb with both hands. The operator then makes the circular incision as quick as possible, through the skin and membrana adiposa down to the muscles; he next separates the cellular and membranous attachments with the edge of the knife till as much skin is drawn back as will afterwards cover the surface of the stump with the most perfect ease. The assistant still firmly supporting the parts as before, apply the edge of your knife under the edge of the retracted integument, and cut obliquely through the muscles, upwards as to the limb, and down to the bone; or, in other words, cut in such a direction as to lay the bone bare about two or three fingers' breadth higher than is usually done by the common perpendicular incision, and continue to divide or dig out the muscles all around the limb by guiding the knife in the same direction. The part where the bone is to be laid bare, whether two, three, or four fingers' breadth higher than the edge of the retracted integuments, or, in other words, the quantity of muscular substance to be dug out, in making the double

incision, must be regulated by considering the length of the limb and the quantity of skin that has been previously saved by dividing the membranous attachments. The quantity of skin saved and muscular substance taken out must be in such exact proportion to each other as that by a removal of both the whole surface of the wound will afterwards be easily covered, and the length of the limb not more shortened than is necessary to obtain this end. The bone being now laid bare all around, is to be divided as usual with the saw, and as high up as possible, which will be more easily executed if the retractor \* \* \* is first applied for the support and defence of the soft parts." He now proceeded to draw out each artery with a tenaculum, separating it from all its connections, and then tying it with a slender ligature. The tourniquet was then loosened and the wound carefully cleaned, in order to detect any vessel that might otherwise have remained concealed with its orifice blocked up with coagulated blood. The surface was next well sponged with warm water in order to remove every particle of filth and coagulated blood. He insisted strongly on the necessity of securing every vessel which was likely to bleed when symptomatic fever set in, alleging that the pain of re-securing them and the disturbance of the wound are serious drawbacks to the healing of the wound.

Having thus thoroughly cleansed the wound and secured it against future hæmorrhage, the skin and muscles were gently brought forward. A flannel roller was next applied, first around the body, then two or three firm turns were made around the upper part of the thigh, to form a sufficient basis for the support of the skin and muscles. The roller was then carried down in a circular direction to the extremity of the stump, not so tightly as to press rudely or forcibly, but so as to give an easy support to the parts. This bandage was regarded by Alanson as of great importance in supporting the muscles and preventing spasm. The skin and muscles were now placed over the bone in such a direction that the wound appeared only as a line across the face of the stump with the angles at each side, from which points the ligatures were left out, as their vicinity to either angle might direct. The flap covered the entire face of the stump

with the most perfect ease, and was retained in place with several sutures and long strips of linen or lint, two fingers' breadth in width, spread with cerate or some cooling ointment. If the skin did not easily meet, strips of a sticking-plaster were preferred. These were applied from below upwards across the face of the stump, and over them a soft tow-pledget and compress of linen; the whole being retained with the many-tailed bandage, and two tails placed perpendicularly, in order to retain the dressings upon the face of the stump. The stump was then placed on a pillow, which raised it about half a hand's breadth from the surface of the bed. He was opposed to the plan of raising the stump on thick pads, believing that thereby the muscles were unequally put on the stretch. The stump was now left undisturbed, and redressed only to secure perfect cleanliness.

A careful examination of the preceding details reveals the following peculiarities in Alanson's method: (1). He made ample coverings for the stump. (2). Every bleeding vessel was carefully isolated and ligated. (3). The wound was thoroughly cleaned, and every particle of blood removed. (4). A bandage was then applied from the body downwards, sufficiently firm to control all spasm and prevent retraction of the flaps. (5). The flaps were then laid on the face of the stump and gently but steadily compressed with light strips of sticking-plaster. (6). The wound was redressed with the greatest care in order not to disturb the union. In a word, with great care and nicety, he aimed at primary union of the wound, by making ample flaps and removing every condition which might disturb the process. And his success was all that could be desired; neither suppuration, sloughing, hæmorrhage nor exfoliation, but rapid healing and sound stumps.

A century has passed since Alanson announced his "improved plan" of amputations, or primary union, sustained by a record of thirty-five consecutive operations successfully treated. Though the century has been apparently the most remarkable in the world's history for improvements in surgery, yet it is still a mooted question whether amputation wounds shall be treated openly or closed. The judgment of surgeons is, as one hundred

years ago, beclouded with fears and doubts as to the dangers of hæmorrhage, suppuration, spasm and exfoliation. But we can exhibit no record of results by our improved methods equal to those of one or two centuries ago; the nearest approach to it is that of Messrs. Paget and Callender, of St. Bartholomew, London, who report thirty successful consecutive cases. And it is an interesting fact that their plan of treatment closely resembles that of Alanson in attention to all the little details of preparation of the wound for prompt union and its subsequent cleanliness. Though they use antiseptic remedies to a limited extent, yet they lay far more stress upon care in the management of the wound and its protection from injury. Mr. Callender simply reiterates the truths which Alanson taught: "Success in the further management of operation and other wounds is insured by extreme care and gentleness in the manipulation of the parts and by strict maintenance of rest."

Hey, of Leeds, a friend of Alanson, and one of the ablest of a peculiarly brilliant corps of surgeons in active practice at the time, thus wrote upwards of thirty years later: "The method of amputating so as to heal the wound by the first intention, as it is called, I consider as a capital improvement, and am sorry that it is not yet universally adopted. If I were not aware of the force of long-established opinion and practice I should be ready to conclude that a surgeon was defective either in knowledge or humanity who did not prefer this method whenever it was in his power to make use of it. A cure is performed by it in one fourth of the time which is required when the ordinary mode of dressing is used. The pain subsequent to the operation, which is great and long-continued when the interior parts of the wound are dressed, is hereby avoided in great measure; and the cicatrix, which must remain in some degree after the wound is healed, being reduced to a very small breadth, is not so liable to break open again from accidental injuries. This method of operating, when rightly understood, is not peculiarly difficult; but the comparative relief which the patient receives from it is great indeed."

ART. II.—*Morbid States of the Colon and Rectum.* By A. G. CRAIG, M. D., Ghent, Ky., formerly Resident Physician of Cincinnati Hospital.

The anatomical arrangements of the large intestine show that it is designed to serve as a temporary depot for fæcal matter, so as to provide against frequent movements of the bowels. Experience teaches us that one free evacuation of the bowels, daily, is the rule of health. There are, however, exceptions to this rule. Some persons in good health have two or more evacuations daily, while others do not go to stool oftener than every second or third day. The importance of preventing and curing constipation can not be too strongly insisted upon by the practitioner of medicine, when it is remembered that an overloaded state of the bowels is one of the most frequent causes of disease. There are few maladies of any kind in which disorder of the liver, the pancreas, and the mucous follicles of the bowels, do not play an important part in exciting and maintaining the morbid action. The quantity of bile secreted daily by the liver amounts to about forty fluid ounces. If the functions of this organ are arrested or interfered with, the irritating materials which it is destined to remove from the blood being retained in that fluid, there must be as a necessary consequence great derangement of the nervous and vascular systems, as evinced by headache, backache, giddiness, excessive lassitude, feverishness and general malaise. The functions of the pancreas may become deranged, and its secretions vitiated in quality by a constipated state of the bowels. It is not difficult to form an idea of the serious effects that must result to the mucous follicles, existing as they do in immense numbers on the surface of the alimentary canal, from the interruption or suppression of their functions. There is perhaps no morbid condition which is so common a cause of disease of the uterus as habitual constipation. By an unnatural overloading of the colon and rectum with fæcal matter the mucous membrane becomes diseased, and through sympathetic irritation the lining membrane of the uterine organs becomes affected, and sooner or later the disease may be transmitted by sympathy to the mucous membrane of the bronchial tubes,



giving rise to cough and occasionally terminating in pulmonary tuberculosis. From constipation and disordered secretions the nervous derangements are often perplexing, giving rise to anomalous symptoms in organs so remote from the real seat of irritation as to create great difficulty in diagnosis, and often symptoms are treated instead of directing our remedies to the removal of the real cause of the disease. A natural result of these fæcal accumulations, distending and dislocating the colon, is disturbance of the circulation in the uterine vessels. And until the mechanical pressure is removed, we make little progress in permanently relieving the uterine diseases. Another consequence of atony of the colon is nausea and vomiting and derangement of hepatic circulation. The morbid state of the colon, both by continuity and sympathy, may be communicated to the stomach, duodenum and liver, in which case perverted primary assimilation and deranged hepatic secretion are super-added to the lesions of the colon. The sympathetic nervous system, which is so extensively distributed to the abdominal viscera, soon becomes involved, and the irritative action is communicated finally to the pneumogastric nerve, the terminal branches of which are distributed so minutely upon both the external and internal coats of the omental peritoneum. Hæmorrhoids generally result from mechanical arrest of the circulation, caused by an unnatural burdening of the large intestine with fæcal matter. Kidney troubles often result from the same cause.

The principal causes of chronic constipation are neglect of exercise, or very active exercise, close application of the mind to study or business, sedentary habits, muscular torpor of the alimentary canal, defective glandular secretion, and the neglect of the timely attendance upon the calls of nature; the last being the most common cause of this affection, which entails so much suffering upon thousands of our race. Nature is a good physician, but her admonitions must be heeded, or we must suffer the painful consequences. How often we meet with girls who are inmates of boarding-schools, and working women, who pass days, and sometimes weeks, without having a movement of the bowels, which would not be the case were they informed

of the serious results of habitual constipation and had not neglected the timely calls of nature.

In chronic constipation the contractile power of the intestine is impaired by distension caused by fæcal matter, and the muscular tunic of the bowel is more or less paralyzed. The rectum in its normal state is almost empty. When the fæcal matter passes down into the rectum it occasions the desire to defecate. If this call is resisted, unheeded, and the act postponed, the animal sensibility of this portion of the intestine no longer gives notice of fæcal accumulation. This is the way constipation is induced in a large majority of cases.

In the treatment of this affection two leading indications present themselves; the first is to secure the mechanical clearance of the retained fæces; the second, to restore the colon to its normal condition, so that it will perform its regular and healthy functions.

In securing free evacuations of the bowels, active purgatives should never be resorted to, and drastic purgatives are most mischievous agents. Epsom or rochelle salts, castor oil, pills of rhubarb, etc., in small and repeated doses, if necessary, on an empty stomach, aided by large injections of cold or warm water, will generally prove effectual. But by far the most important indication in the treatment is to restore the colon and rectum to the regular and normal performance of their functions. To accomplish this the means may be arranged into dietetical, hygienic, medicinal and mechanical.

The dietetical means consist in using articles of food which leave after digestion a bulky residuum, or articles with indigestible constituents which stimulate the muscular tunic of the colon, or articles which possess laxative properties. To the first class belong such articles of food as cabbage, greens, etc.; to the second, bread made from corn meal or unbolted flour, etc; to the third, prunes, apples, stewed fruits, molasses, etc. Molasses, however, is too acescent to be used constantly. One of the best articles of diet in this affection is cracked wheat boiled three or four hours, adding water from time to time, so as to bring it to the consistence of hominy. It can be eaten with cream and sweetened to the taste. By the mechanical

quality of the particles, it is an excellent peristaltic persuader. A well-regulated hygiene should be strictly observed. Every kind of food which is not readily digested should be prohibited. The sleeping apartments should be clean, dry and freely ventilated. If the habits of the patient are sedentary, he should resort to horse-back riding and other out-door exercise. It is folly to administer medicines for the cure of disease to those who neglect hygienic means.

The medicinal means are laxative remedies. In selecting these we should choose slowly-acting cathartics and such as promote intestinal secretion. Active purgatives are to be avoided, and the quantity of the laxative should be as small as will suffice for the object. Where there is great torpor of the liver, calomel in doses of one grain or less, administered occasionally, will be found beneficial. It unquestionably exercises a specific influence on this organ in exciting defective secretions, and its operation on the mucous tissues is scarcely less apparent and decided. There is much popular prejudice against the use of this drug, and yet in the hands of the judicious physician it is a remedy potent for good. Small doses of podophyllin, leptandrin, or taraxacum, may in many cases be substituted for the mercurial. To overcome the muscular atony of the large intestine, aloes stands conspicuous as compared with all others of its class, as it is the only one which, by specific and almost exclusive action upon the colon and rectum, excites the peristalsis of these viscera. Objections are often made to it on account of some tendency it may be supposed to have toward the production of hæmorrhoids, but in aperient doses it is both preventive and remedial of that affection. In grain doses it may be variously combined in a pill either with rhubarb, extract belladonna, extract nux vomica, extract gentian, a preparation of iron, quinia or other tonics. One pill a day should be administered, or oftener if required. The smallest amount of laxative medicine that will secure one free movement of the bowels daily should be the rule. In some cases the purified ox-gall will be found a very valuable addition to the aloes. I have frequently prescribed with excellent results a pill composed of one grain of aloes, two grains of rhubarb, and the eighth of a

grain of *nux vomica*. It is no small advantage that aloes possesses over all other laxative remedies that the dose may be decreased as the habit of using it continues.

"It has been supposed to stimulate the hepatic secretion, and certainly acts sometimes very happily in jaundice, producing bilious stools even after calomel has failed." Trousseau and other distinguished medical writers declared that belladonna was *the* remedy for habitual constipation. It is claimed that it relaxes the circular muscular fibers and at the same time gives tone to the longitudinal. "It does not purge, nor does it produce loose stools, but only renders defecation easy and natural. And, unlike cathartics, it is also slow in its action; it may require days before perceptible effects are produced." It may with advantage be combined with aloes and other remedies, but it has failed in my hands to produce the beneficial effects in atonic states of the colon claimed for it by others, and I have frequently made trial of it. I believe equal benefit can be derived by the administration of the extract of stramonium, and in some respects it is to be preferred. Where the torpor of the rectum approaches a paralytic state of the muscular coat a minute dose of strychnia, added to a laxative, will be very important. Electricity is also an agent of considerable power, and may be resorted to in obstinate cases as an adjuvant to other remedies.

The mechanical means consist of enemata and suppositories. The regular employment of an injection of warm or cold water each morning immediately after breakfast is sometimes an effective measure. By means of a Davidson's syringe the patient may attend to this himself. A suppository of soap is less disagreeable to some persons, and will usually act promptly. These measures should not be habitually resorted to, as the rectum may become accustomed to the distension and they cease to excite the peristaltic movements.

The treatment of chronic constipation involves management as well as drugs. It is well to have a regular hour to solicit an evacuation of the bowels, and, perhaps, immediately after breakfast is the most suitable time. The patient should devote a reasonable time to the function of defecation, and it

should not be omitted a single day. Evacuating the bowels at a certain hour every day may be brought fully under the control of habit. Both patient and physician should understand and appreciate the importance of habit in the management and prevention of habitual constipation.

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## ECLECTIC DEPARTMENT.

“Carpere et colligere.”

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ART. I.—*Spasmodic Stricture of the Œsophagus.* By MORELL MACKENZIE, M. D., London.

Gentlemen,—The subject which I have to bring before your notice is one of considerable importance. The disease is common and very distressing to bear; it often obliges the patient to abstain from all convivial intercourse, makes life almost unendurable, and in some rare cases even ends fatally.

*Etiology.*—Spasm of the œsophagus, like other neuroses unattended with appreciable alterations of structure, occurs more commonly in the female than in the male sex. It is most frequent in young and delicate girls of the upper classes, but women of all ages and social conditions are liable to suffer from this complaint. It is often a symptom of hysteria. Those of the male sex who are attacked are always of a highly emotional and nervous temperament, and not infrequently the subjects of hypochondriasis. The fear of hydrophobia has been known to produce it, the most remarkable instance (“*Biblioth. Méd.*” t. xxxix. p 254) being that of a man who, returning to France after an absence of twenty years, heard that his brother had died from the effects of the bite of a dog, which had also bitten him. Shortly after hearing this news of his brother he was seized with spasmodic stricture, which quite prevented him swallowing, and he ultimately succumbed to the disease. Anæmia is very often present, and there is frequently some disorder of digestion. The late Dr. Brinton (“*Lancet*,” 1866, pp. 2, 253), indeed, attributed many cases to the latter cause, and pointed

out that spasm of the œsophagus was especially liable to occur where there was a gouty dyscrasia and an excessive acidity of the blood. This affection is apt to attack those who are in the habit of eructating wind. The spasm always comes on when the patient is no longer able to dispel the flatulence in the usual way. Middle-aged women are generally the subjects; and carminatives, by leading to expulsion of wind, soon effect a cure. It also occasionally appears to be due to a rheumatic affection of the muscular structure of the œsophagus. The disease is sometimes hereditary. I have at present under my care a young lady whose mother and grandmother both suffered from the malady. The spasm may be excited directly by some source of irritation within the tube, such as the temporary lodgment of a foreign body, or by irritation of the walls of the gullet—the bloodvessels being charged with acid salts; or the contractions may be due to reflex causes, such as disease or irritation of the gastro-intestinal canal, respiratory organs, heart, or reproductive system. It is frequently attributed to uterine irritation, and has been known to be caused by metritis (*"Archives de Médecine,"* t. xxxi, p. 474), and to disappear on the cure of that disease. I have met with two patients who always suffered when pregnant, but were relieved immediately after parturition. I have also seen one case in which the spasm came on whilst suckling, and recurred to such an extent at the birth of each child that the mother was always obliged to wean her infants. Howship (*"Practical Remarks on Indigestion,"* London, 1825) has related two remarkable cases in which disease of the stomach produced stricture of the œsophagus. In one of these the patient, a man, was treated by bougies for four months on account of stricture of the middle third of the œsophagus. After death no stricture was found, but the stomach was in a state of "fungous ulceration for a hand's breadth." In the other case a lady, aged sixty-nine, suffered from spasmodic stricture of the upper part of the œsophagus, which was relieved by the passage of bougies. The patient, however, still continued to vomit a glairy fluid, and to become progressively emaciated. At the post-mortem the stomach was found to be a mass of scirrhus, whilst the œsophagus was perfectly healthy.

Béttali (Velpeau, "Dict. de Médecine," art. "Œsophagus,") has recorded a case in which the presence of tænia in the intestinal canal gave rise to spasm of the œsophagus; and Bouteille (Idem.) refers to an instance in which the affection was caused by the presence of worms in the ear. In infants the troubles of dentition often give rise to severe and dangerous spasm of the glottis. It is occasionally associated with other diseases of the nervous system, as chorea, tetanus, epilepsy, and is the most prominent and fatal feature in hydrophobia.

*Symptoms.*—Dysphagia is always complained of. This is of a very varying intensity, from a slight feeling of difficulty in performing the act of deglutition, which can be overcome by a powerful effort of the will, to an almost total inability to swallow. In slight and recent cases solids or semi-solids are swallowed more easily than liquids, but as the disease becomes chronic fluids pass the more readily. The dysphagia also is more or less paroxysmal, and not continuous or progressive. Sometimes the patient will be able to eat with little or no difficulty, and again, shortly after, she will scarcely be able to swallow at all. Another peculiarity is that the patient not only says she can not swallow, but generally has no inclination for food. In cases of organic stricture, on the other hand, the patient craves eagerly for food. Regurgitation, though more often wanting, is sometimes present, and, when it does occur, comes on immediately after swallowing, there being no appreciable interval as in organic stricture. The food under these circumstances is rejected with great force, so as to be sent quite beyond the mouth. Odynphagia is often present, especially in those cases connected with flatulent dyspepsia. Emaciation is often altogether wanting, and never bears any proportion to the duration and apparent severity of the obstruction; often, indeed, well-nourished women are met with who declare that they can not swallow at all. Expectoration is almost always absent, and only exists in any degree in the rarest cases. There is seldom any alteration of the voice or cough, except when the spasm of the œsophagus is reflected from the larynx. A laryngoscopic examination should, however, be made in all cases to ascertain the condition of the wind-pipe.

*Physical Signs.*—Auscultation of the oesophagus often affords valuable information. Thus *the point of obstruction may be heard to vary in situation.* The first morsel may be arrested or retarded at the upper part of the oesophagus, whilst the second or third morsel is stopped two or three inches lower down; or whilst the act of deglutition is interrupted or delayed one moment, it may be performed perfectly the next. This is an absolute proof of the spasmodic character of the affection. Again, the morsel may be heard to be arrested or forced upwards for a second, and then to pass down the gullet. There is generally not nearly so much of the bubbling or gurgling sound as is met in organic stricture or oesophageal diverticula.\* On passing a bougie, an obstruction will generally be felt in the region spasmodically contracted, but this can often be overcome by moderate force. Sometimes, however, the spasm is so tight that it can not be overcome by anything short of violence. Several attempts should be made on different occasions to pass the instrument; and, if possible, a time should be selected for using the bougie when the patient is free from difficulty of swallowing. Sometimes a rapid attempt to pass the instrument will succeed when a more deliberate one fails. If the patient be placed under the influence of ether, all difficulty in passing the instrument will be removed.

*Diagnosis.*—The age and sex of the patient are usually of much aid in diagnosis. It is most common to young women between the ages of eighteen and thirty, but it often occurs in

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\* The so-called "globus hystericus," so frequently complained of by hysterical patients, is probably nothing more nor less than a passing spasm of the oesophagus. The patient complains that she feels "a ball" rise from under the breast-bone into the throat, where "it appears to stick," and produces a feeling of choking. Hamburger was the first to explain satisfactorily this phenomenon by auscultation. If a patient can be examined at the moment she experiences the sensation of "the ball" rising, on applying a stethoscope, a sudden contraction of the oesophagus and the ascent of a bubble of air will be heard. On the other hand, Rosenthal ("Handbuch der Diagnostik und Therapie der Nervenkrankheiten," p. 245) found in two cases that galvanization of the hypoglossal nerve immediately inhibited the spasm of the oesophagus. He asserts that the "globulus hystericus" is not really a cramp of the oesophageal muscles, because the patient can swallow whilst this phenomenon is present. Hamburger's observations, however, appear conclusive.



females between thirty and forty; and I lately treated two little girls for this affection, one of whom was aged nine, and the other eleven. The intermittency of the dysphagia, absence of emaciation, suddenness of regurgitation (when it occurs), and the fact that in most cases we can overcome the obstruction with the bougie, suffice to allow of a correct conclusion being drawn as to the nature of the case. Cases sometimes occur, however, in which the judgment must be suspended until the progress of the complaint clears up any doubt. The course of a malignant stricture is always progressive, whilst that of a spasmodic obstruction is variable and intermittent.

*Pathology.*—The affection consists essentially of a spastic contraction of the circular fibres of the muscular coat of the œsophagus. Its most frequent occurrence at the extremities of the tube is explained by the greater abundance and higher development of the circular fibres in those situations. The spasm is due to an excitation of the pharyngeal and œsophageal plexuses, induced in most cases by irritation of a branch of the vagus. A perverted or unstable condition of the nervous centres is doubtless necessary for its production, and hence the complaint occurs in connection with hysterical and other nervous disorders. Owing to the wide distribution of the vagus, the irritation may be in the œsophagus itself, in the larynx or larger air passages, in the lungs, or in the heart. It may proceed from some disturbed or diseased condition of the stomach or intestines, or of the other abdominal viscera. It may be caused by some alteration at the roots of the pneumogastric in the medulla oblongata. The origin of the pneumogastric being near the great vaso-motor centre, any lesion in that situation accounts also for the other phenomena of the hysterical condition—the coldness of hands and feet, the alternate flushing and blanching, the so-called “hysterical attacks,” and the passage of large quantities of limpid urine. Dr. Brinton thought that in lithæmia the acid condition of the blood causes spasm of the œsophagus in the same manner that it produces “cramp” in the legs, or numbness and formication in various parts of the body.

*Prognosis.*—The prognosis is generally very favorable in

recent cases, but where the disease is of very long standing, like many other nervous affections it becomes intractable, is apt to lead to narrowing of the œsophagus, and probably either predisposes to cancer or determines the site of its development. The cure is often protracted, and relapses are apt to occur. Cases have been reported which have resulted in death, whilst no disease could be found in the œsophagus. Mr. Power relates a remarkable instance which was seen by several eminent members of the profession, in which the stricture was sufficiently severe to destroy the patient, a man aged forty-eight, by inanition, and yet after death no organic lesions whatever in or around the œsophagus could be found to account for the symptoms. Such cases are extremely rare, but the possibility of their occurrence should be borne in mind.

*Treatment.*—Whenever the cause, whether of constitutional or local origin, can be discovered, it should be removed. All reflex sources of irritation—especially those connected with the gastro-intestinal and uterine systems—should be most carefully sought out, and, if possible, got rid of. The nervous system must be braced up by moral as well as by hygienic and medicinal agencies. It must not be forgotten that the hysterical disposition prevails in by far the largest number of cases. The mind should, if possible, be kept employed by regular and interesting occupation, or by change of scene and travel. Certain nervine tonics are specially valuable, such as the valerianate of zinc. I generally give it in combination with assafoetida, but it acts very well alone.

The dietary in these cases is of the greatest importance. If the spasm is very severe, thickened liquids should be given; and it is well to bear in mind that warm drinks are much less apt to bring on spasm than cold ones, and in nine cases out of ten if the drink is sweetened it is better borne. Many patients discover these circumstances without medical advice. Gradually the food may be thickened, and panada\* may be allowed.

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\* Panada is generally made of chicken or some white meat, but mutton and beef may be employed. The essence of the meat should first be extracted, and the residue reduced to the finest pulp. The whole should then be mixed together and passed through a fine sieve. It should then be heated, and in the case of invalids should be served with fresh gravy.

If the case progresses favorably, the patient will be able to return by degrees to ordinary diet. Stimulants should not as a rule be allowed, and all piquant food should be prohibited. It is the greatest mistake to force these patients to take solid food. They may sometimes be tricked out of their malady when it is slight and recent, but rough measures always fail.

As regards local treatment, much can be done with the continuous current. The electrode should be introduced into the oesophagus at least once a day, and kept in position as long as the patient can bear it. I generally use a ten or twelve-celled battery. The application should be made soon after a meal, so that a considerable time may elapse between the treatment and the next time of deglutition. The muscles should also be galvanized externally. This treatment generally requires to be continued for some weeks or months. Sometimes great benefit, and indeed a complete cure, may be obtained by passing bougies. It is best to use an instrument with a metallic or ivory knob, and if possible to keep the extremity of the instrument opposite the seat of spasm. This treatment affords relief in the same way that passing a sound sometimes relieves irritability of the neck of the bladder. I have never obtained any satisfactory results from the application of stimulating or astringent solutions to the oesophageal mucous membrane. It has already been pointed out how easily those cases dependent on flatulent dyspepsia can be cured. It must not, however, be forgotten that in a large number of instances the dysphagia is a mere fancy, there being in fact no spasm. By passing a bougie and assuring the patient that there is no obstruction, such persons may sometimes become aware of the groundlessness of their sensations, but they are often more difficult to cure than true spasms.

Before dismissing the subject of oesophageal spasm, I must briefly call your attention to what has been termed *dysphagia lusoria*. It has been stated that when the right subclavian artery is the last branch given off from the arch of the aorta, wending its way from the left to the right side of the chest, and passing either between the trachea and oesophagus or between the vertebral column and the oesophagus, the gullet is occasion-

ally compressed, and difficulty of swallowing thus produced. It is extremely doubtful, however, whether the artery is capable of producing any appreciable effect in this way, unless it has undergone aneurismal dilatation.—*Med. Times and Gaz.*

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ART. II.—*Position of Tracheotomy with Respect to Croup.*

By Dr. SCHULLER, Assistant Physician at Griefswald Clinic.

Dr. Griefswald observes ("Deutsche Med. Woch.") that there is scarcely any other operation that has been so differently appreciated as tracheotomy; and its urgency in croup (a region wherein surgery and medicine come into contact) is especially a matter of lively controversy even at the present time. He trusts that the practical importance of the subject will excuse his attempting an exact estimate of its value. Most persons place much too narrow limits to tracheotomy, employing it as an extreme measure at the last stage of the disease; this practice originating in the entirely unjust view that it is in itself a very dangerous operation, only to be resorted to as an extreme measure. On the other hand, some expect from tracheotomy more than it can supply, seeming to think that its mere performance will suffice for the cure of the disease. The confusion of ideas that has resulted from these opposite views is the usual consequence of a want of exactness in stating what we have really to expect from the operation.

That the mere opening of the air-tube in itself is unattended with danger has been shown in numberless cases, and in the results of its suicidal division, the difficulty in healing such wounds has been greatly exaggerated. In croup the danger to life has become so great when the operation is suggested, that this should be performed, even if it were far more perilous. The air tubes are obstructed by the newly-formed membrane, the tumefaction of the mucous membrane, and the accumulation of mucus; and sooner or later, the glottis is probably rendered incapable of action by the paralysis of its dilators produced by infiltration. The resulting dyspnoea varies with the intensity and extension of the diseased process, and may reach a certain

height without being attended with great danger ; but, sooner or later, life is threatened, especially when the croupous inflammation extends to the finer bronchial divisions. This respiratory insufficiency plainly demands our interference, and that whether we regard the croup as a simple local process, or a mere localization of a general disease. Resolvents and expectorants soon reach the limits of their utility, and indeed usually correspond very imperfectly to the indications ; but by means of tracheotomy, free access of air, the removal of the obstructing membranes, and the relief of the dangerous dyspnoea are obtained. The condition of the patient is greatly improved by this mere opening of the air-tube, and his life preserved from the immediately threatening dangers. Moreover, removal of the detached membranes, and also the direct application of medicinal agents to the diseased membrane, become far more easy; and the minuter ramifications of the air-tubes become more accessible. In comparison with other means of combating the disease, it is by far the most efficacious ; and, indeed, it is the only one capable of contending with the dangerous suffocative paroxysms of croup. The earlier it is resorted to, the greater will be its success ; and if we delay it until the last stages we must not expect remarkable or durable results. Carbonic acid intoxication has then produced paralysis of the central organs of the nervous system (especially those influencing the cardiac and respiratory movements) so that restoration may have become impossible, even without taking into consideration that extensive infiltration of the lungs may have rendered these organs incapable of their function. Moreover, it must be remembered that in the meantime an important general infection of the system has been produced by the operation of the croupous process, which is combated with greater difficulty in consequence of the insufficiency of the movements of the heart and respiratory organs. Yet, even under these circumstances, we should still have recourse to the operation in order to relieve the sufferings of the patient. But although the performance of tracheotomy at an early stage in croup is desirable, yet it is by no means necessary in all cases of the disease. In order to determine when the operation is called for, the following rule

may be laid down, viz., that it should always be resorted to as soon as the child manifests great dyspnoea. If the ribs are drawn greatly inwards during inspiration, the muscles of the neck and chest exhibiting compensatory action, and if the lips become blue (a sign of insufficient decarbonization of the blood), then tracheotomy is not only to be recommended, but it has become an absolute necessity. If, under such circumstances, time be lost in resorting to other remedies, not only will the force of the above indications have been misapprehended, but the chances of the operation when undertaken somewhat later will be rendered much worse. In such a case as this, tracheotomy is the most practical physiological procedure, and is to be preferred to all others.

We need not follow Dr. Schüller in his description of the operation, only observing that he employs chloroform or not, according to whether there is or not danger in the delay which is thus entailed. He has not found that its cautious use increases the dyspnoea, while it greatly facilitates the execution of the operation in unruly children. After the trachea has been opened, the expulsion of the membranes and masses of mucus is best secured by the introduction of a medium-sized gum-elastic catheter (the edges of the wound being held apart by hooks) as far as the bronchial division, this operating in part by exciting cough, and in part by suction. The catheter is to be rapidly introduced and withdrawn in this manner until the respiration becomes free, which it generally does before long. But no pains must be spared to secure this end; and it is not until then that the hæmorrhage, which has hitherto been arrested by forceps, is definitely prevented by ligature of vessels—although the bleeding usually stops spontaneously after the removal of the forceps. The after-treatment is of very great importance, and has not been sufficiently appreciated by the opponents of tracheotomy. At first, the patient must be guarded day and night by a well-instructed person, whose duty it is to constantly watch the condition of the respiration, to remove the accumulated mucus from the canula by means of a feather, and from time to time withdraw the inner tube and free it from the dried secretions which would otherwise easily ob-

struct it. As this is not always easily replaced, and in order to favor the solution and expulsion of the membranes, an inhaling apparatus should always be kept in action at the bedside, filling the air with the vapor of water in which minute quantities of carbolic acid, lime-water, etc., may be diffused. Direct inhalation is not always required if a sufficient quantity of the vapor is set free in the vicinity of the aperture. This procedure seems also to have some effect in preventing pneumonic infiltration. When any disturbance of respiration takes place, the elastic catheter should be again introduced, and the obstructing membranes removed by suction. Should any of the matters thus withdrawn get into the mouth of the operator, he should rinse it out with diluted carbolic acid.

By following out the above plan, which may have to be continued for several days, Dr. Schüller states that he has met with excellent results. Internal remedies may, according to the indications, be combined with these mechanical procedures, which, however, are usually sufficient. In his opinion, no treatment of croup can compare with tracheotomy, and he is unable to understand how Vögel can object to it. Any one who has seen these cases must know that by far the most important indication to be met is the danger of suffocation, the children dying, in the majority of cases, not from the croupous process itself so much as from the obstruction of breathing which this has given rise to. For the relief of this there is no measure like tracheotomy; and it may be the more readily employed, as it always renders the combating croupous process by mechanical and pharmaceutical measures much more possible. Death may occur in spite of tracheotomy; but it is not the consequence of the operation, but of a persistence of the general infection, or the occurrence of ensuing complications; and if the operation were resorted to more promptly, it would less often follow.—*Med. Times and Gaz.*

## CLINICAL RECORDS.

"Ex principiis, nascitur probabilitas: ex factis, vero veritas."

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ART. I.—*Excision of the Upper Jaw—Four Cases—Osteo-Sarcoma—Central and Peripheral.* By W. W. DAWSON, M. D., Professor of Surgery in Medical College of Ohio.

The operation for the removal of the jaw, although classed with capital ones, and is in reality a great operation, is not attended with much trouble; the parts are very vascular, yet I do not remember that it was necessary, in either of the four operations, to ligate a single artery. The earlier surgeons, overestimating the danger of hæmorrhage in these cases, resorted to the ligation of the common carotid, thus adding to a comparatively safe operation one, the mortality of which is, and ever will be, very great.

In making the excision, I employed but one incision; beginning below the inner angle of the eye, I extended it down by the side of the nose to and through the upper lip. By dissecting from this line and throwing the cheek back, I was enabled to reach the malar junction with ease. With the large, sharp, pointed bone-cutter, I separated the tumor from the malar, I divided the nasal process, and cut through the alveolar border at the median line, then seizing it with the lion-jawed forceps, I forced it from its position. These tumors came out en masse as if encapsuled; in but one case (No. 1) were there left prolongations and fragments that had to be removed. Here, as in all sarcomatous growths, it is important that all implicated matter be excised. Repullation is very likely to occur upon parts that have already the degenerative disposition; even those in the affected neighborhood are in danger from outliers.

I can hardly imagine a tumor large enough to require the horizontal incision under the eye, as recommended by Sir William Fergusson, in some instances, much less the incision across the cheek dividing the duct, the nerve and artery, as practiced by Lizars and Gensoul. Indeed, quite a large-sized tumor may be removed without any incision at all, or at most, by a mere division of the upper lip; the cheeks allow a very liberal retrac-



tion. The deformity following the practice of division of the cheek obliquely upward and outward from the angle of the mouth was fearful. Furthermore, the section of the nerve led to paralysis; the division of the duct to salivary fistula; the cutting of the artery to inflammation, to healing by granulation, and often to a sloughing erysipelas.

The cavity from which the tumor came was filled with oakum, or lint saturated with carbolic acid or salicylic acid solutions. A five per-cent. solution of the latter is to be preferred.

The cavity in one case was treated with persulphate of iron, in expectation of hæmorrhage; in the other three cases no styptic was employed; the oozing of blood was insignificant; I do not regard styptics as necessary. The last two cases were washed with solution of salicylic acid.

Suppuration was free in all the cases, but granulation was so prompt, that in a few weeks the breach was almost obliterated.

Osteo-sarcoma, although a badly-used term, in the past, having been applied to all kinds of tumors connected with bones, cartilaginous, medullary, benign, malignant, solid, semi-solid, seems to be appropriate to that class of growths of the "developmental series" which occurs in the upper and lower jaws, and which result in a degeneration of the bone, forming a tumor partly osseous, partly sarcomatous. In some of these formations you find spindle cells; in others, giant cells.

The term sarcoma should be confined to the limit given by Billroth. It means, certainly, more than a fleshy growth—a myomata, but yet it can not be applied to all formations having a repellant nature. Those with the alveolar structure, true carcinomata, should be excluded. The distinguished Vienna pathologist expresses the matter well when he says: "A sarcoma is a tumor consisting of tissue belonging to the developmental series of connective tissue substance (connective tissue, cartilage, bone), muscles and nerves, which, as a rule, does not go on to the formation of a perfect tissue, but to peculiar degenerations of the developmental forms."

By an examination of these cases and an inspection of the tumors after removal, by their perceptible-to-the-hand-and-eye features, without the aid of the microscope, I assigned them to

their proper pathological position; the spindle cells found in two of them examined confirmed this assignment. All of them, the three central and the one peripheral, were alike in physical features, semi-solid, elastic, nodular. The knife in all revealed the presence of irregularly distributed bony masses.

In the lower jaw, these growths are sometimes surrounded by a thin layer of bony matter, often not thicker than the shell of an egg; in the upper jaw, however, the osseous matter is found distributed through the tumor in spiculæ, plates and irregularly shaped and isolated masses; all shape of the original bone disappears; the degenerated bone, when removed, has lost all semblance of its former self. The condyle of the inferior, and a part of the alveolar process near the centre are sometimes seen, whilst the nasal process of the superior maxillary is often all that is left of that bone.

Repullation, in the degenerations of the upper jaw, is by no means the rule, although the tumors may belong to the class of spindle-celled sarcomas. There is a law just here in reference to recurrence that is not yet understood. Billroth suggests this idea when he says: "Moreover, I think I can affirm from my observations, that the course and progress of these tumors scarcely depend on their origin, but far more on their *locality, rapidity of growth, and other clinical conditions.*" The italics I have added. This observation will be confirmed by all who have had experience with these morbid formations. A spindle-celled sarcoma in one locality means always a recurrence, whilst in another these cells are far less positive factors, their presence leaving the future of the case uncertain.

In three of the cases the disease commenced in the interior of the bone, and can properly be designated central osteosarcoma. In the fourth, John M. Graham (figures 4-5), the largest tumor of the group, the degeneration was peripheral, originating upon the periosteum, and advancing inward upon the bone, but developing rapidly upon the exterior. A considerable portion of the superior maxillary in this case had not undergone change, or rather had not undergone sarcomatous degeneration; this was upon the posterior part; the action was such as to leave the posterior wall of the antrum thickened,

and from this portion the tumor seemed to be completely separated. This, with the apex of the nasal process, and enough of the alveolar border to support one tooth, was all that remained of the superior maxillary. In the other cases the roof of the antrum was free from the degeneration.

CASE I.—*Osteo-Sarcoma of Upper Jaw—Central.*—*Death from Pyæmia on the Nineteenth Day.*—As this patient had come to the city from Newtown, in this county, a neighborhood remarkable for malaria, I hoped, when the chill was reported to me at my morning visit on the twelfth day, that it was malarial, and not the announcement of pyæmia. A short time, however, showed me that this hope was delusive, and that the rigor indicated unmistakably blood poisoning.

This chill, as will be seen by the report following, furnished to me from the records of the Cincinnati Hospital by W. E. Keily, occurred on the twelfth day after the operation. On the fifth day, the change in the character of the wound, the aplastic discharge, with the red and tender spots upon the forehead, had given me some apprehension; but as they were not associated with or immediately followed by rigors, I was reassured. His general condition, in fact, improved up to the twelfth day, after which all of the symptoms of pyæmia were well pronounced—a succession of chills at irregular intervals, drenching and exhausting sweats, restlessness, frequent and feeble pulse, great heat of body, great tenderness of the wound, arrest in the healing process, the discharge of a thin, fetid débris, and abscesses in the neighborhood.

In one respect, this tumor differed from the others, and from growths of this kind generally—it was the seat of constant pain. It required potent quantities of morphine to render the patient comfortable.

In size this tumor corresponded to Case 4. The first photograph which was taken was lost—pyæmia intervened between the artist and my patient, and prevented the second.

Daniel Garver, aged 60, Ohio; admitted April 28, 1869. Ten months ago a swelling appeared under right eye. This was accompanied with a dull pain. This swelling has gradually increased until the present time. It now involves the

whole of the left superior maxillary, encroaching on the orbit and cavity of the mouth. The tumor is of a hard, bony consistence when examined by touch and external manipulation.

Ordered tinct. ferri chlor., gtt. x, and potassii chloratis, gr. v, ter die.

*May 4th.*—The increase in the size of the tumor is unmistakably visible since his stay in the house; pain is of a dull, aching character, for the relief of which he takes one or two grains of morphia daily.

*May 5th.*—Tumor removed by Dr. Dawson at 10 A. M.

*Evening.*—Patient doing well; complains of some smarting. To have beef tea, also morphiæ sulph. q. s. to procure rest and quiet pain.

*May 6th.*—Slept well last night; feels comfortable; takes beef tea, milk, etc., in good quantities.

*May 7th.*—The lint was removed this morning from the anterior part of the cavity made by removal of the tumor; condition fair.

*May 8th.*—Doing well. To have. ℞—Acidi carbolic, ℥j; aquæ, Oj. M. S. Wash the mouth occasionally.

*May 9th.*—Needles removed from lip, which was found to be united nicely; also some of the stitches were removed from the face.

*May 10th.*—No change of note; stitches and wound dressed; also lint plug removed from mouth.

*May 11th.*—Noticed this morning a small patch of redness over nose on forehead; was touched with tr. iodine; upper portion of wound fallen open, also a small space under right ala of nose; appetite not so good; pulse frequent and soft. Ordered soft-boiled eggs for each meal, and to have mouth syringed out with carbolic acid mixture twice a day.

*May 12th.*—Not so well to-day; patches of redness have spread very much during the night, now covering quite a portion of the forehead; appetite still very poor; the lint plug re-applied to wound, in mouth. ℞—Quinine sulph., gr. xxxij; aqua, ℥ij; acid. sulph. arom., q s.; tr. ferri chlor., gtt. clx, S. ℥i, in water every two hours.

*May 13th.*—Patient much better this morning; erysipelatous

trouble entirely gone; has some drooping of right lower eyelid; adhesive strips removed this morning, and not reappplied; no change in treatment.

*May 14th.*—Much better; no return of erysipelas; appetite improved; ordered bottle of ale.

*May 15th.*—Much better; appetite good; a little deformity, inferior lid of right eye drooping and inclining outward.

*May 17th.*—Still improving; has some cough at times, yet not severe; suffers no pain; rests pretty well at night; appetite tolerably good.

*May 18th.*—Patient had a severe chill last night about 12 o'clock, lasting for about one hour; afterward had fever and a good deal of delirium; is not so well this morning; is a good deal restless and peevish, yet complains of no pain; on removing the lint from the wound, found it to be discharging more than usual, and fetid; lint removed, and was ordered quinine sulph., gr. v, at noon, and to be repeated in the evening; appetite about the same.

Daily record from this until 24th omitted.

*May 24th.*—Very much prostrated this morning. Pulse 106 and feeble; face very pale and emaciated; fetor from wound in the mouth very much greater than at any previous time; discharge about the same; abscess on side of face still discharging quite a quantity of thin pus; passed a very restless night; was called to see him at 11 o'clock, and found him suffering pain in the epigastrium, with recti muscles very tense; gave a hypodermic injection of morph. sulph. over region of pain, which gave a great amount of relief; found his extremities growing cool, and so much prostration that I ordered whisky  $\text{ʒss}$  every three hours until morning. In the morning found the above condition existing; redressed wound, and treatment continued same.

At 9 o'clock found to be failing very rapidly; pulse very feeble; respiration frequent and rather jerking, lies in a half stupid state, with eyes half closed and balls rolled upward; was given his egg-nog, but found almost unable to swallow. Died at 11:50 A. M.

CASE II—*Osteo-Sarcoma of Upper Jaw, Central*—Reported from the *Clinical Records of the Good Samaritan Hospital*, by L. S. Hine, M. D., Resident Physician.—William Rowe; aged 39; Germany; resides on East Walnut Hills; gardener. Admitted September 17, 1875. No hereditary disease; has had uninterrupted health until the appearance of his present trouble.

About one year ago he was seized with a severe frontal headache, which continued for two months. About this time he had some teeth extracted from the upper jaw, during which process the dentist evacuated an abscess situated in the antrum. Ten months ago the patient noticed an enlargement of the left upper jaw; the swelling has not been attended with pain, and has steadily increased until about one month ago. At present there is a tumor occupying the roof of the mouth on the left side, and pushing over beyond the median line, the teeth having been



FIGURE 1.

thrown off; the lower border corresponds to the alveolar process; it is irregular—nodular; the nodules are semi-solid and elastic. The tumor seems to be about the size of an orange; the prominence of left cheek is very great.

September 22d.—Dr. W. W. Dawson operated, the patient being anæsthetized with ether. The cavity was filled with lint wet with solution of per sulph. of iron. On the 23d the temperature reached 102½. Wound washed with carbolized water.

The wound in the cheek healed without suppuration, and the cavity was being rapidly filled when he left the hospital on October 14, 1875.

An inspection of figure 1 shows a mere depression in the cheek fourteen months after the operation.

Cases III and IV are reported by J. Cooperrider, M. D., Resident Physician, Hospital of the Good Samaritan.

CASE III.—*Osteo-Sarcoma of the Upper Jaw, Central.*—Mrs. Degnan, aged 43, Ireland, resides near Paris, Ky.; entered hospital September 26, 1876; mother of eleven children; belongs to a healthy family; previous to present illness has always enjoyed robust health. About ten months ago a small tumor appeared above the first molar tooth on the left side; from this the whole area occupied by the superior maxillary increased and changed rapidly. Notwithstanding the rapidity of its growth it has never caused any pain.



FIGURE 2.

*Present Condition.*—The growth extends from the first bicuspid to the last molar tooth, inclusive. It has grown downward so as to cover in the teeth, and extends over about one-half of the hard palate. It is elastic and nodular. The mucous membrane covering the mass is healthy except at two or three points, where there are shallow ulcers, ashy in color, and which discharge a thin and fetid odor.

Mrs. Degnan, on the 4th of October, was etherized, and the tumor removed by Prof. W. W. Dawson.

The temperature, the second day after the operation, reached  $103\frac{1}{2}$  degrees; pulse 100. Opium was administered for a few days; the wound, after the oakum plug was removed, was washed with salicylic acid solution; the cavity filled rapidly, and she left for home October the 25th.



FIGURE 3.

Figure 2 shows Mrs. Degnan before the operation; figure 3 was taken twenty days afterward.

CASE IV.—*Peripheral Osteo-Sarcoma of the Upper Jaw.*—The tumor in this case, as will be seen from the engraving, was the largest of the four. The deformity was great; but an inspection of plate number 5, taken three weeks after the operation, shows but little trace of the abnormality.

John M. Graham, aged 46, cooper, West Virginia, admitted to Good Samaritan Hospital September 26, 1876, with a large tumor of the right upper jaw. No hereditary tendency could be ascertained; health always fair. In November, 1874, he received a severe blow on the right side of the face; the cheek became badly swollen. After a few days the swelling passed away, but pain remained in the region of the bruise. A month after the receipt of this injury he noticed a swelling on the right side of the hard palate as large as a filbert; this he took



for an abscess, and punctured it. Instead of pus following the withdrawal of the knife, blood only made its appearance. Four weeks after the swelling upon the palate a growth appeared upon the outside of the maxillary; ulceration followed, and bits of bone were occasionally discharged. Considerable pain was experienced. At times he punctured the enlargement upon the palate; after each puncture considerable blood would flow. Finally some of the teeth became loosened and were easily removed; the remaining teeth were almost buried in the mass as the tumor enlarged.

No treatment was adopted except the puncturing, if that could be called treatment, until two months ago, at which time a mixture of alcohol and ergot was injected twice a week for six weeks. No effect was noticed except a free flow of blood after each injection.



FIGURE 4.

*Present Condition.*—There is a swelling of the side of the face, as if an orange had been placed within the right cheek. The skin is healthy in color, but to the touch it is smooth and tense. On opening the mouth, the tumor is seen to occupy the space from the incisors to the last molar inclusive, and encroaches upon the hard palate beyond the median line. The color is deeper than the surrounding mucous membrane; the outline is irregular, nodulated, and here and

there a point of ulceration is to be seen. On the seventh day after his admission, being exposed to cold, he suffered greatly with pain in the face, and an erysipelatous blush appeared over the tumor around the eye and upon the forehead. This delayed the operation one week. October 11th, he was brought before the class and etherized, and the tumor removed by Prof. W. W. Dawson. No untoward occurrence from this time until his discharge on the 31st day of October.



FIGURE 5.

This patient, before he left the house, was eating with comparative comfort, although the granulating process was not concluded.

Figures 4 and 5 show how the fearful deformity has been removed. For the loss of the teeth the skill of the dentist will compensate.

I have said on a former page that the presence of a spindle-celled sarcomatous tumor in some localities leaves the future of the case uncertain, but that when found in other situations, the return of the disease is but a question of time. From some cause, the upper jaw, although frequently the seat of this species of degeneration, is peculiarly exempt from recurrence. Hence, then, if the tumor be thoroughly excised, we may forecast the case and give an almost positive assurance that there will be no return. The why of this is to be explained in the future.—*Cincinnati Clinic.*

ART. II.—*Opium Poisoning—Green Vomiting.* By T. CURTIS SMITH, M. D., Middleport, Ohio.

In August, 1876, I was called to see Mrs. W., aged fifty, of nervo-bilious temperament, costive habit, and a general complainer of ill health; very dark complexion. I found her, to all appearance, suffering from extreme gastric colic. Observing the pulse to be but 70 and normal, skin and pupils normal, with a great disposition to exaggerate her suffering, and also noticing that she watched closely the effects of her ravings upon the attendants, I concluded that at least a part of her manifestations were hysterical. Gave morphia sulph. one-fourth gr. hypodermically, and tr. assafoetida freely and often internally; finally adding to the latter paregoric. Of the assafoetida she used up three ounces, and of paregoric one ounce during three hours. The subcutaneous injection producing no effect observable, it was, after three hours, repeated. My only excuse for not repeating it sooner was the fact that I thought the case largely hysterical, added to which was a statement from her daughter, that they always had great trouble in keeping her awake after she was relieved from the pain, which they attributed to chloroform she had used. One and a half hours after giving the last dose of morphia I was summoned, only to find my patient profoundly narcotised; pupils contracted to pin-point size; skin cold and white as marble; pulse rapid, feeble and remittent, 120; respiration less than four per minute. I gave at once the 1-60th gr. atropia sulph. subcutaneously; applied heat, sinapisms and frictions; after a half hour repeated the atropia; the pupils dilated; pulse became fuller and more forcible for, perhaps, five minutes, when all was worse than before, face becoming livid. Injected twice a syringe of aqua ammonia into the arm; no effect. For a while with flagellation, friction, and sinapisms, the respirations could be brought up to seven. I should also say that caffeine and whiskey were freely used hypodermically, the patient being totally unable to swallow. After near two hours of such labor and treatment without any apparent permanent benefit, my friend Dr. W. A. Watkins was called in at my request. He "gently whispered in my ear." "She'll die." I had thought so, and my mind had already fancied coroner's

inquests, funerals, and suits for malpractice, and his whisper sounded ghostlike; but electricity was suggested. We accordingly directed frictions, etc., continued while we repaired to my office, and carried over a 32-cell Bartlett battery. Immediately one pole was applied over the diaphragm, the other over the phrenic nerve. At first ten cells, then twenty, then the whole thirty-two cells, without much effect; but while these were being applied in full force I suddenly and rapidly changed the directions of the currents (interrupted), when, to my great relief, she drew a long breath. Resting an instant, the process was repeated, when another long, deep breath and a slight moan came forth. After continuing this process for fifteen minutes, every change of current or sudden application of it would bring a distinct and prolonged oh! much to our satisfaction. We by this means kept the respirations going at from twelve to fifteen per minute for two hours, when we found her able to swallow. Coffee, very strong, was now freely given. Whenever the battery was stopped a minute she at once relapsed. It was therefore continued with constancy for four hours, and then every few minutes for the next six hours. Electricity seemed to be the only agent that was effectual. She made a slow but good recovery.

I have very many times administered more morphia at one dose in an extreme case of pain than this woman received altogether in the three hours. (Much of the paregoric was vomited). Why the anodyne influence should be so long delayed after it had been injected into the tissues and then act so powerfully, is more than I can explain. Besides, half a grain of morphia does not, as a rule, produce such profound narcotism as was present here. Only for the warning given by her daughter that much trouble in keeping her awake always followed these attacks to which she was subject, it is quite likely that I would have given her more than half a grain in a shorter period.

*Green Vomiting.*—In April, 1869, I was called to see Mrs. Mc., age forty-three; bilious temperament; medium stature; dark hair and eyes; fair skin, and found her suffering from what her former attendant had been pleased to call gastralgia. She was

of costive habit, and dyspeptic, often suffering from headache and wandering nervous pains; also from menorrhagia every month, so that she was quite anæmic. At my first visit she was suffering severe gastric pain, and vomiting sour fetid stuff from the stomach, which was composed of the supper she had eaten, with much liquid. After relieving this attack with antacids, anodynes, and an enema per rectum to secure a passage, she was placed on a general tonic and anti-dyspeptic course. But still these attacks recurred as before, and most severely at the catamenial period. The attacks increased in frequency, until finally they appeared every three or four days, and at last were continuous. With the increased frequency came increased severity, and especially increase of emesis, the vomited material assuming the appearance of a grass-green fluid. The attacks would appear suddenly, with gastric pain, followed immediately by profuse green vomiting.

Now, the point in this case that has always been a puzzle to me I will describe: Upon having an attack she would (late in the course of the disease) vomit an ordinary gallon basin full, or even more, of the grass-green fluid, quite as thin as water. In from five to fifteen minutes she would vomit as much more, and so on for from five to ten times before relief could be afforded. I have seen her vomit more than an ordinary bucket full in the course of two hours on several different occasions, *always the green fluid*. She did not drink this quantity of fluid, for several times water was entirely withheld, but the vomiting was equally as much as when allowed water or other fluids. Again, the water she drank was measured a number of times between her vomitings, which would be a pint or a half-pint, as she might desire, but when the vomiting returned another three to five quarts of fluid (green) would be thrown from the stomach.

How to account for this phenomenon I do not know. It seems very incredible, I admit, and sounds *fishy*, but every word of the statement is rather an under than an overstatement of the case.

She died the following August. Upon opening the stomach its mucous coating was found greatly disorganized, and the liver

exuded pus wherever an incision might be made into its substance. All other abdominal organs seemed healthy. No other cavity opened. The only agent that seemed to afford relief during an attack was morphia hypodermically. I have never seen a report of any similar case, nor have I ever seen a similar disease in any other case, and should be pleased to hear reports from others who may have seen such cases.

NOTE.—If any of your correspondents have ever seen any case similar to the one headed "green vomiting," I should be happy to hear from them through your Journal or directly.

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## PROCEEDINGS OF SOCIETIES.

"Etsi non prosunt singula, juncta juvant."

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### Osteitis Deformans.

There was an unusually large attendance at the meeting of the Royal Medical and Chirurgical Society of London on the 14th of November, 1876, when a paper upon a form of chronic inflammation of bones (osteitis deformans) by Sir James Paget, President, was read and discussed, the speakers being Sir Wm. Gull, Mr. Brudenell Carter, Mr. Barwell, and Dr. Goodhart.

Before the adjournment, the medical Secretary read a report addressed to the President by the delegates of the Society at the recent Medical Congress at Philadelphia. The report alluded in flattering terms to the management of the Congress, the high character of the communications read there, and to the cordial reception given to all the delegates. The report was signed by Dr. Barnes, Dr. Hare, and Mr. Brudenell Carter.

A paper on a "Form of Chronic Inflammation of Bones (osteitis deformans)," by Sir James Paget, Bart., D. C. L., LL. D., F. R. S., President, was then read. It opened with a detailed account of a case which had been for many years under the author's observation. It was that of a gentleman in whose family there was no history of gout or rheumatism, but one of whose sisters had died of chronic cancer of the breast. He was a tall, thin,

and well-formed man, and the father of healthy children. When forty-six years of age, he began to suffer from pains in the thighs and legs, and at the end of one year he noticed the left shin to be somewhat misshapen. Sir James Paget first saw the patient in 1856, or two years from the commencement of the disease. He was then in good health, prematurely gray, and walked stiffly. There was some enlargement and irregularity of the left tibia and lower half of the left femur, but no tenderness. The urine deposited lithates. The case being regarded as one of chronic periostitis, iodide of potassium was given, but without result. Three years later the author again saw the case, this time in conjunction with Mr. Stanley. The left tibia had become larger and longer, so that it was curved anteriorly; the femur also was more distinctly enlarged, and was arched forwards and outwards. This side of the pelvis appeared widened, and the whole limb was about a quarter of an inch shorter than the right. There was very little suffering, the clumsiness of the limb being the chief trouble. He had taken much iodine and other medicine, without the least effect. For the next seventeen years the disease steadily but slowly progressed. The left tibia continued to enlarge, and became more curved, and the same change taking place on the right side, the two limbs in time became symmetrically affected, and at the same time the knees became gradually bent. The skull also slowly increased in size, the head retaining its natural shape, and the face not being at all affected. The spine became slowly curved and almost rigid, so that the patient's height diminished from six feet one inch to five feet nine inches; and the chest became narrow, shortened, and deeper from before backwards, and all movement was much restrained. The head was bent forwards, and the neck consequently shortened. The arms, not sharing in the shortening of the trunk, seemed long in proportion (photographs were handed around, showing the condition six months before death), and the angle formed by the shaft with the neck of the femur was diminished. In 1870, the left knee-joint became actively inflamed, and was left more stiff and bent afterwards; at the same time some insufficiency of the mitral valve was detected. In the summer of 1874 the patient

suffered partial loss of vision from retinal hæmorrhage, and he also began to be somewhat deaf. He then also suffered from neuralgic pains, chiefly in the upper part of the body. In January, 1876, pain in the left forearm and elbow, followed by swelling in the upper part of the radius, appeared; but he was otherwise in good health, enjoyed a good appetite, and his mind was quite clear. From this time he began to fail, and it was evident that the painful swelling of the forearm was due to a cancerous growth, and on the 24th of March, after suffering from pleural effusion, he died. At the autopsy the head was retracted to a level with the sternum, and the lower limbs rested upon the nates and heels, from the arching of the bones. The pericranium and dura mater were healthy. The lungs were compressed and contained a few nodules of cancer on their surface. The mitral valve was atheromatous and calcified; the aortic slightly atheromatous. The femur, tibia, and patella, and upper part of the skull were removed for examination. The upper one-third of the left radius was involved in a large pale gray mass of medullary cancer, the rest of that bone being healthy. Some cancerous nodules also occurred in the skull. The spine was shortened, but presented no outgrowths nor ankylosis. All the sutures of the skull were obliterated, the thickness of the bone being about four times the natural. The whole outer surface of the skull-cap was finely porous and reticulated for the passage of bloodvessels, and internally the grooves for the middle meningeal arteries were deepened, and a layer of dense white bone formed the inner table, but in places were intervals where reticulation was marked, in which a quantity of cancerous material was contained. The condition of the long bones was that of fine nodulation of the outer surface without any visible change in the periosteum, the surface being perforated extensively for transmission of vessels. The medulla was natural; the cancellæ had a normal disposition, but the compact substance of the shaft, and especially of the articular ends, was greatly increased in thickness. In places the outer layers of bone appeared to be separating in the form of thin plates; in other parts dense hard patches occurred. Mr. Butlin made a careful microscopical examination of the skull and the



tibia, and found a diminution in the number of Haversian canals, which were widened and very confluent, and were occupied by a large amount of fibro-nuclear tissue, leucocytes, and occasionally myeloid cells and fat, around the contained vessels. The lacunæ and canaliculi were numerous, but not different from ordinary bone. A chemical analysis by Dr. Russell showed very little difference in composition to exist between the diseased and normal bone. The disease of which this case is an example is so rare and peculiar in its course that clinically it is not difficult to distinguish it, but specimens of the affection may be met with in museums under the general name of osteoporosis, hyperostosis, senile rachitis, etc.

CASE II.—Ten years ago the author saw a gentleman between fifty and sixty years of age, whose general health was good, but who had been suffering for many years from pain in the thighs and legs, attended by progressive increase in the size of the bones. Death took place from medullary cancer, involving the upper end of the humerus. No post-mortem examination was made.

CASE III.—The author saw, with Dr. Brinton, a gentleman forty to fifty years of age, also in perfect health, with pains, enlargement, and curvature of the tibia; there was some thickening of the periosteum. Iodide of potassium was given without effect.

CASE IV.—A case of this kind is recorded by Dr. Wilks in the *Path. Trans.*, vol. xx. The patient was sixty years of age when he died, and had been under the care of Sir W. Gull. He first suffered pain in the legs fourteen years before death. The tibiæ enlarged, and subsequently the cranium. The thorax also became implicated, the chest gradually becoming contracted and fixed. Sir W. Gull's notes add that the disease was accompanied by weakness, occasional vertigo, lowness of voice, but no pain. The head gradually enlarged, and the stature had decreased. The ribs were thick and immovable, and there was dullness on percussion over the whole chest. Post-mortem, in addition to changes in the skeleton, described as "osteoporosis," or "spongy hypertrophy," there was an epithelioma of the dura mater as large as a chestnut.

CASE V—Was that of a carpenter sixty years of age, under the care of Mr. Bryant, in Guy's Hospital, with no history of syphilis, but who had for five years been subject to slight attacks of gout. Three years before admission he suffered from pains about the ham-string tendons. When seen by the author, there was marked anterior curvature of the tibiæ, the right being larger than the left; the fibula and patella were also enlarged, as were the bones of the upper limbs, chiefly humeri. The clavicles were thick, and the processes of the scapula enlarged. The ribs of the right side were slightly larger than those of the left. Usually the patient sits with his head bent forward. There is slight thickening about the internal protuberance of the occipital bone. Sir J. Paget had been unable to find recorded any cases precisely similar to these, and he considered the following to be the chief characters of the affection: It begins in middle age or later; is very slow in progress; may continue for many years without influence on the general health, and give no other trouble than those which are due to the changes of shape, size, and direction of the diseased bones. Even when the skull is largely thickened, and all its bones exceedingly altered in structure, the mind remains unaffected. The disease affects most frequently the long bones of the lower extremities and the skull, and is usually symmetrical. The bones enlarge and soften, and those bearing weight yield and become unnaturally curved and misshapen, suggesting the proposed name, "osteitis deformans." The spine, whether by yielding to the weight of the overgrown skull, or by changes in its own structure, may sink and seem to shorten, with greatly increased dorsal and lumbar curves; the pelvis may become wide, the necks of the femora may become nearly horizontal, but the limbs, however misshapen, remain strong and fit to support the trunk. In its earlier periods, and sometimes through all its course, the disease is attended with pains in the affected bones—pains widely various in severity, and variously described as rheumatic, gouty, or neuralgic, not especially nocturnal or periodical. It is not attended with fever. No characteristic conditions of urine or of *fæces* have been found in it. It is not associated with any constitutional disease, unless it be cancer,

of which three out of the five cases recorded in the paper were the subjects. The bones examined after death show the consequences of an inflammation affecting, in the skull, the whole thickness, in the long bones chiefly the compact structure of their walls, and not only the walls of their shafts, but, in a very characteristic manner, those of their articular surfaces. The changes of structure produced in the earliest periods of the disease have not yet been observed, but it may be believed that they are inflammatory, for the softening is associated with enlargement, with excessive production of imperfectly developed structure, and with increased blood-supply. Whether inflammation in any degree continues to the last, or whether, after many years of progress, any reparative changes ensue, after the manner of a so-called consecutive hardening, is uncertain. The microscopic characters bear out this view of the nature of the process, and Mr. Butlin, in his report, discussing whether it might be of the nature of new growth, hypertrophy, or chronic inflammation, decides in favor of the latter. The paper goes on to point out the diagnosis from various forms of hyperostosis and osteo-porosis, some of which are dependent upon simple inflammation of bone, others upon strumous, gouty, syphilitic, and other specific inflammatory processes. In such cases it is rare to get the whole length of the bone affected, but the distinction between them and "osteitis deformans" is most evident in the clinical history, and the absolute retention of good general health in the latter. The only parallel in this latter respect is with chronic rheumatic arthritis, which, however, is perfectly distinct, and is never associated with osteitis deformans. Rachitis and osteo-malacia have scarcely a feature in common with osteitis deformans. In rachitis the bones are too short, too small, and have different curves to the elongated and thickened bones of this disease; and in osteo-malacia they are thin and bent in an angular manner. In conclusion, the paper indicated the variety of diseases which have given rise to different examples of the great porous skulls found in museums, mostly without any life history. Some of them are examples doubtless of (1) osteitis deformans; others (2) of osteo-malacia, as in cases described by Durham and Solly, which are distinguished by

their softness and lightness in proportion to their size; (3) of rachitis, where the skull is very light and friable, with a fine felt-like surface; similar skulls from young lions and tigers are to be found in the Museum of the Royal College of Surgeons; (4) from disease in early life, in which both cranial and facial bones become largely thickened, porous, or reticulated, and the cranial cavity diminished; to this group belongs the "leontiasis ossea" of Virchow; lastly (5) enormous, bossed, and nodular outgrowths from the skull, as in the specimen described by Dr. Murchison and Messrs. Hulke and De Morgan in the Pathological Society's Transactions, volume xvii.

Mr. Brudenell Carter said that three years ago he saw the patient whose case had been described by Sir James Paget. He was suffering from a little cloudiness of vision in one eye, and, speaking from memory, Mr. Carter said that all that could be detected was a number of small hæmorrhages at the periphery of the retina. Dr. Andrew Clark also saw the patient, and considered the heart to be hypertrophied. Sir James Paget said that he had vainly tried to discover whom his patient had consulted about his vision, for he was anxious to know whether there was any indication of compression of the optic nerves. Mr. Carter replied that, so far as he recollected, there was no change whatever in the disc; the retinal hæmorrhages were attributed to the cardiac hypertrophy. Mr. Barwell said that the specimens appeared to show that the bones had lost substance interstitially, with increased deposit in other parts. Was there much increase in weight or in specific gravity? He remarked that the Germans now style the affection known as chronic rheumatic arthritis by the name of "arthritis deformans," but it could equally well be called osteitis deformans, since in it the changes in the bones are as marked as those in the joints. He alluded to the difficulties in distinguishing between dried specimens of osteo-porosis and those of the disease described in the paper. Sir William Gull, referring to the case which had been long under his observation, and which was mentioned in the paper, could not see why it should be considered an osteitis. There was very little pain, but gradual enlargement of the bones; the urine was always normal. If this was an osteitis,

he would ask how did it arise? and why were some parts of the skeleton free from it? The clavicles and the hyoid bone were affected, but not the small bones of the hands and feet; the processes of the scapula, but not its blade. The patient died from the effects of thickening of the ribs, and consequent fixation of the chest-walls, and the whole venous system was engorged. This engorgement accounted for his mental confusion as well as for the vascularity of the bones found after death. Was the process represented in comparative anatomy? It had none of the ordinary characters of inflammation, and might be a low physiological process. Dr. Goodhart said the paper was of great interest in its bearing upon general pathology. He noticed that a large proportion, three out of five, of the subjects of the disease had died from cancer. Was there no link between the two? He ventured to submit the hypothesis that the process was rather of the nature of a generalized tumor—a diffused growth of osseous connective tissue, comparable to the diffused growth of fibrous tissue seen in molluscum fibrosum. If it were of this nature, and yet inflammatory, the development of cancer at the end of a length of years was very suggestive; it was as if there had been a gradual deterioration of the cells of ordinary inflammation ending in the formation of cancer. Sir James Paget, in reply, said that the total weight of the affected bones was much increased, but not their specific gravity. The whole new product was bone, but with altered architecture. He had no doubt as to its being an osteitis, because there was a degeneracy of texture with an increase in its quantity. The gross definition of inflammation was an increased production of imperfect structures. As to its exact pathology, that was certainly doubtful. The name he had given to the disease showed that he knew nothing as to its origin, but in like manner absolutely nothing is known regarding the etiology of chronic rheumatic arthritis. He did not think there was any relation between the disease he had described and chronic rheumatic arthritis. In osteitis deformans the amount of arthritis is trivial, and in not one case of the joint disease was there any such implication of the shafts of bones as in osteitis deformans. In his exhaustive essay on chronic rheumatic arthritis, Dr.

Adams, of Dublin, states that in no case does the disease affect the shaft of the bone. To Dr. Goodhart he would say that whilst the changes exhibited were so clearly the result of inflammation, it would be enlarging the field of tumors to include this change under them. He thought the coincidence of cancer in so many of the cases was accidental, and pointed out that in only one case was the cancer developed in connection with the bone that was the seat of the osteitis; that was the case in which cancer of the dura mater occurred with the affection of the skull. In two other cases not read, one in Leyden and the other in St. Bartholomew's museum, cancer was associated with this condition of bones. At present it was a coincidence which could not be explained.—*Lancet*.

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## ORIGINAL CORRESPONDENCE.

"Sit mihi Fas scribere audita."

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SELMA, ALA., January 15, 1877.

*Dr. E. S. Gaillard :*

Dear Sir,—There has been quite a dispute as to which is the safest anæsthetic, chloroform or ether. Chloroform has held its sway pretty well in the South, while ether has been almost alone used in the North. There have been a number of deaths reported from ether of late; an unfortunate doctor, I notice, in Rahway, New Jersey, lately lost a patient from ether in the dental chair. I am firmly convinced, with Waring, that no anæsthetic is safe in dentistry. I decline to give it to my patients. Not long ago, in an editorial in the Weekly, you, after a thorough analysis of the question as between the safety of chloroform anæsthesia and that from ether, decided that chloroform, prudently administered, was safer than ether, or as safe, and pleasanter. I report the following case as one in which chloroform was certainly fully and freely administered :

Mrs. R.; multipara; aged twenty-eight years; in last month of her fifth pregnancy was attacked with purulent ophthalmia.

This disease has been prevailing through this section for the last two years; it is always attended with great nervous prostration, agonizing hyperæsthesia of the eyeball, extending back to the brain, apparently via the optic nerve, and a general constitutional disturbance. This lady had an attack in the other eye a few months before; recovery was slow; she had a hard summer; was pregnant; had a nursing infant fifteen months old; this infant was going through the second dentition and was very sick with summer complaint; required constant care. He then, with his next brother, three years old, had the Egyptian ophthalmia; then she contracted it. You can realize that the mother by October was pretty well worn out. Now came the second attack of ophthalmia. She begged for chloroform; got a pound on October 29th; October 30th another pound; on November 1st another pound; used a pound a day for three days. Strange to say, she became much better; cured more rapidly under this treatment than any that I had ever used; and it was about the only treatment used. November 11th labor set in; another pound of chloroform used; breech presentation; female; delivered at 9 P. M.; cord pulseless; too long in delivery; could not resuscitate it. Another pound of chloroform used on the 12th of November, and one on the 13th of November. These last two were for after-pains, which were very severe. On the tenth day patient sat up, and had a severe sick headache. Again used about twelve ounces of chloroform. The chloroform was used by pouring a teaspoonful or less on a towel or handkerchief, and allowing her to inhale it herself until sleep came on. She took food repeatedly while taking the chloroform each day. No bad result followed save a sighing respiration during sleep for several weeks afterwards.

I will say that I allowed the patient to take so much chloroform because I observed no bad effects from it; she was under my constant supervision, and begged for it.

Respectfully, yours,

BENJ. H. RIGGS, M. D.

## BEARD'S STATION, KY., 1877.

*Dr. E. S. Gaillard :*

Dear Doctor,—I write to ask you whether or not there was ever a surgeon who had performed many surgical operations of any note before he was eighteen years of age? I am not acquainted with any instance of the kind, except in the case of myself. I have done considerable surgery for a young man, and nearly all of it between my fourteenth and eighteenth years.

I write this information as much for my State as for myself. Kentucky has already the honor of having furnished the best and boldest, and now I am anxious to add, the youngest surgeon in the world.

Within the above-mentioned years I performed the following operations, and mention them in the order in which they come in my experience: Amputation of middle finger; paracentesis abdominis, taking away  $8\frac{1}{2}$  gallons of fluid; extirpation of adipose tumor weighing four ounces; amputation of leg just below the knee, injured on the Louisville, Cincinnati and Lexington Railroad; amputation of forearm in a boy five years old; extirpation of scirrhus tumor from mammary gland, taking away two-thirds of the gland; amputation of thigh in its middle third in a full-grown man with a tremendous thigh; all of which were pronounced good operations by the physicians in attendance. I made cures of them all except the railroad accident, in which death was occasioned by tetanus. I had also done some general practice and delivered about twenty women, some of whom were primipara. Consequently I had been physician, surgeon and obstetrician before I was out of my teens.

Hoping that this little experience still leaves Kentucky in advance of other States and countries, in surgery especially, I remain your friend.

J. A. FREEMAN, M. D.

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GRAFTON, ILLINOIS, 1877.

*Dr. E. S. Gaillard :*

Dear Sir,—On the 3d of April I was called to see a case of gunshot wound penetrating middle third of forearm of a lad



fifteen years of age. Six days after, secondary hæmorrhage took place by sloughing of radial artery, which threatened the life of the patient until temporary means were used to arrest it. Ligation of the artery was determined upon as the proper course. Seven hours elapsed before assistance could be obtained for performing the operation, during which time a compress and bandage remained over the brachial artery. After removing it, no hæmorrhage occurring, the operation was deferred, and wound healed without further interference. This case I regard as a fact that is well to be remembered.

Truly yours,

C. L. HERRIOTT, M. D.

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HOSPITAL FOR THE INSANE, WESTON, W. VA., 1877.

*Dr. E. S. Gaillard:*

Dear Sir,—Enclosed I send the statement of a remarkable case of fasting, if it is so. The person who makes the statement is the sheriff and jailer of Barbour county, West Va., and is entitled to consideration, as he had her under his own eye during the whole time.

She was admitted to this hospital October 29th. Her physical condition was pretty good at that time.

Yours truly,

T. B. CAMDEN, M. D.,  
Sup't West Va. Hospital Insane.

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PHILLIPPI, BARBOUR Co., W. VA., 1877.

*Dr. T. B. Camden, Sup't Hospital for Insane at Weston:*

Dear Sir,—As you requested, I here send you a statement in regard to the length of time that Mrs. Martha E. Phillips, a lunatic (in jail), went without eating. She was placed in my care on the 9th day of August, 1875, and did not eat a mouthful of anything until the 5th day of September following, and then not until she was fed by force and compelled to eat. She drank water all the time, and seemed to sleep well; seemed to lose flesh for the first two weeks past, but after that time not so fast, though she got very weak, and kept up during the day.

Respectfully yours, J. W. TALBOTT, Sheriff and Jailer.

## CHEMISTRY AND PHARMACY.

“Diruit, œdificat, mutat.”—HOR.

**Tasteless Tincture of Iron (T. & S.)**—The tasteless iron preparations were introduced several years ago by Mr. J. L. A. Creuse, and have become a favorite and staple remedy. The tastelessness is owing to an addition of an alkaline citrate, which not only masks the taste of iron, but the usual tests as well. The tincture may be made by adding an alkaline citrate (say citrate of soda or ammonia) to an aqueous solution of sesquichloride of iron, in the proportion of two equivalents of the former to every three equivalents of chlorine in the latter, whereby a green salt is produced, which is dissolved in diluted alcohol. Two fluid drachms of the officinal liquor ferri chloridi require about 120 to 140 grains of citric acid, saturated with either ammonia or soda—the quantity depending upon the real iron percentage of the liquor—to be added before the alcohol; and the alcoholic strength of the tincture, when finished, must not be more than 30 or 40 per cent., instead of 70 per cent., as usual.—*New Remedies.*

**Official Alcoholometry in France.**—The French Government is about to adopt by law the centesimal alcoholometer of Gay-Lussac, properly verified and adjusted by official authority, as a standard instrument to ascertain the percentage of alcohol in the wines and liquors manufactured and sold in France. Heretofore no special instrument or method had been prescribed by law in making these determinations, and in consequence thereof the same invoice of spirits tested at different places would sometimes show a difference of 5 per cent. in alcoholic strength.—*Exchange.*

**Brass**—The Prosecution of Prescribing Druggists.—The Executive Committee of the Chemists' and Druggists' Trade Association have passed the following resolution: “That in any case in which a chemist and druggist is threatened with legal proceedings for recommending simple remedies, when required to do so, in his own shop, if he be a member, and the case is such that the sub-committee (appointed for that purpose)

approves, this Association undertakes to defend him, but at the same time disapproves of other indiscriminate prescribing."—*Exchange*.

**Mistura Copaivæ** (Bumstead)—“**Lafayette Mixture.**”—  
 ℞—Copaibæ, fl. ℥i; liquor. potass., fl. ℥ij; extr. glycyrrh., ℥ss; spts. æther. nitr., fl. ℥i; syrup. acaciæ, fl. ℥vi; ol. gaulther, gtt. xvi. Mix the copaiva and the liquor potassæ and the extract of liquorice and spirits of nitre first separately, and then add the other ingredients. Dose: A tablespoonful after each meal.—*New Remedies*.

**Hydrobromic Acid Cough Mixture.**—Dr. J. Milner Fothergill says the following is a really charming cough mixture, efficient as well as palatable: ℞—Sp. chloroformi, m. xx; acid. hydrobromic, fl. ℥ss; syr. scillæ, fl. ℥i; aquæ, ad. fl. ℥i. Ter in die. Any other acid is, he says, very agreeable; but the hydrobromic acid, from the effect of bromine upon reflex mechanism, allays the cough, often so troublesome. It possesses much the same action as opium, without the ill effects upon the digestive organs or the bronchial secretions.—*Medical Times*.

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## REVIEWS AND BIBLIOGRAPHICAL NOTICES.

“Judex damnatur cum nocens absolvitur.”

ART. I.—*Compendium of Histology*. Twenty-four Lectures. By H. FREY, Professor. Translated from the German, by Permission of the Author, by GEORGE R. CUTTER, M. D. New York: G. P. Putnam's Sons.\*

In a former number of this Journal (November, 1868), we gave a brief notice of the cell-doctrine, which may be regarded as the corner-stone of histological science, selecting for comparison the views of Schwann (1838), Huxley (1853), Virchow (1858), and Robin (1867). The rapid appearance since that date of numerous works by leading histologists of Germany,

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\* This Review is from the able pen of Prof. J. L. Cabell, of the University of Virginia.—E. S. G.

especially Stricker's elaborate manual, in the preparation of which the distinguished editor was assisted by more than thirty eminent professors, each contributing a special article (Frey on the Microscope and Microscopic Technology, and Frey's Histology and Histochemistry), is strongly suggestive of an equally rapid progress of knowledge. In point of fact so much has been done that these and other similar productions of German authors, absolutely bewilder the medical student by the multiplicity of their details. Prof. Heinrich Frey, of Zurich, the learned author of the two last-named works, has come to the conclusion that a short compend of the most essential facts of histology is desirable for students and practicing physicians. "Even in Germany," says the translator of this little work, "where thoroughness is the great excellence, there is a demand for a compendium. That Professor Frey's little book meets this want is proved by its enormous sale and the favorable notices of the press." We predict for the translation a corresponding success in this country, where the want hitherto of a suitable text-book has been one of the causes, if not a main cause, of the neglect of this all-important subject. This can not now be urged in extenuation of a neglect which we trust will no longer exist.

The translator has on the whole executed his somewhat difficult task in a very satisfactory manner, although he has occasionally failed fully to unravel the intricacies of an involved German style, so that here and there we find a sentence of obscure or doubtful import, but such instances are rare. In general his style is clear and lucid, and the forms of expression idiomatic. He has, moreover, faithfully preserved the spirit of enthusiasm which enlivens Professor Frey's writings and renders them so fascinating to his readers. He is as much interested in the issue of what he calls an "actually-burning controversy" touching some slightly different opinions on a somewhat obscure point in histology as the people of the United States are in the result of the Presidential election. Such an enthusiasm, when it is real and sincere, is extremely contagious, and when caught, is a precious boon to the student. Who has not at times experienced the invigorating effects on the understand-

ing and the memory of a glow of genuine enthusiasm, whether arising spontaneously from the inherent attractions of the subject or caught by sympathy with an earnest teacher or fellow-student? "There is nothing," says Sydney Smith, "so horrible as languid study, when you sit, looking at the clock, wishing the time was over, or that somebody would call on you and put you out of your misery." How different the case when one identifies himself with his subject, and has learned to love knowledge for its own sake! "This," says the same witty writer, "is the only kind of study which is not tiresome, and almost the only kind which is not useless. This is the knowledge which a man carries about and uses like his limbs, without perceiving that it is extraneous, weighty or inconvenient."

The subject of Prof. Frey's first lecture is "The Protoplasma, the Cell, and its Derivatives." In answer to his own question, "What is the primary beginning of the organic?" he refers to Huxley's marvellous discovery of the *Bathybius*, and, as the passage is a fair sample of his style and his power of graphic description, we cite it in full:

"The bottom of our seas, at the most considerable depths, is covered over large tracts with a strange shiny substance. When this thing, called the *bathybius*, is drawn up by the dredge and placed under the microscope (under that instrument which has conquered the mighty world of minuteness for natural science), a very peculiar image is presented to the astonished eye. We perceive a transparent jelly, with diminutive granules in its interior. We also frequently meet with small corpuscles surrounded by this, consisting of carbonate of lime. They look like our modern sleeve-buttons. And this mass lives! It changes from one shape to another in slow metamorphosis, exhibiting a constant though sluggish restlessness. Separated portions present the same slow mutability, the same life. The mass formed by this *bathybius* is a nitrogenous carbon compound, distended in water, and of an extremely complicated chemical character. It belongs to the group of albuminous bodies, and is called *protoplasma*. It coagulates in death, and also at a relatively slight elevation of temperature. The granules it encloses consist partly of coagulated albuminous sub-

stances, partly of fat; mineral substances are also not wanting. Leaving the dark deep, and turning to the sunny surface of the seas, we here meet with numerous small lumps of protoplasm, which show the same vital transformations, shooting out processes, sometimes short, sometimes longer, and drawing them in again. Such is the protomœba of our figure 2. These are the simplest organisms or forms of life. They increase by division. One of our most distinguished investigators (Hæckel) has called such a lowest being a cytode. We meet with similar organisms intermingled with these cytodes in the water; as, for example, the amœba, though in the interior of this constantly changeable protoplasm, together with excavations (vacuoles) and small foreign bodies, accidentally taken up from the neighborhood, a roundish structure with small punctiform contents is found. The contained body bears the name of the kernel or the nucleus; the small bodies enclosed within the latter are called nucleoli. The entire creature has the significance of a simple naked cell. What service the nucleus renders the amœba we are at present unable to say. We now leave these lowest creatures, and pass at a bound to the highest animal form—to examine the human body. Its parts have been called organs since the primitive days of medicine. They correspond to the separate pieces of one of our machines. It was also long since known that certain substances of our bodies, such as bone, cartilage, muscle, and nerves, were repeated in all portions of the organism, and, slightly or not at all changed, enter into the structure of the most different parts of the body. These substances, which may be compared to the different materials of which the machine is formed, were early known to be composed of still smaller parts. They were compared to the products of the loom, and designated as tissues. This name has been retained, and that branch of anatomical science which treats of these homogeneous parts is called the science of tissues or histology. On attempting, with the aid of the knife and scissors, to separate such tissues, we at first succeed very readily. The fragments permit of a new division, and this may perhaps be repeated on those thus obtained. But at last (sometimes sooner, sometimes later) a period arrives when even the finest

and sharpest tools become unserviceable; they are too blunt, too coarse. Here, where the mechanical analysis terminates, the optical begins by means of the microscope. The latter is an extraordinarily delicate analysis. The fragment, which the anatomists' scissors are unable further to divide, now proves to be infinitely compounded; it may still consist of thousands of the smallest elements. These elements are again, in their turn, cells or their derivatives. Thus this structure, which forms in an independent manner the body of an amoeba, now constitutes our tissues, although in a very conditional independence. The cell has therefore entered into the service of a mighty unity; it has to subordinate and conform itself. Nevertheless, the thing remains a living individual, comparable to the officer of a modern State Department. As he fulfills his individual duty in the service, and as a member of a great whole, so also does the small cell labor unremittingly until its death. It appears of interest that these very small living foundation-stones in the body of the higher animals always form cells, and that the cytodes of Hæckel have disappeared." (pp. 1-4.)

This interesting summary exhibits, in a very graphic manner, the conclusions which now generally prevail as to the independence, however "conditional" it may be, of these ultimate vital unities and their relation to the higher unity of the entire organism, which is thus shown to be a mighty confederation of the myriads of anatomical elements, a fact which Huxley, it will be remembered, so emphatically denied in his remarkable paper on the cell-theory in the "British and Foreign Medico-Chirurgical Review" for October, 1853, but which was subsequently so successfully demonstrated by Virchow in his Cellular Pathology, where it is shown that not only in the simple cellular tissues but also in those in which the cells have lost by development their separate identity, this independence is maintained. For in the case of the connective tissues "every cell, in addition to its own contents, has the superintendence of a certain quantity of matter external to it," its jurisdiction extending to the limits of that of the neighboring surrounding cells. And even in the case of the third series of tissues, in which the elements are more intimately connected with one another, and

are no longer recognized, in the completely-developed stage, as cells, the limitation of pathological processes demonstrates the fact that a certain independence of the parts representing the original component cells still prevails.

We may infer from some of the later utterances of Professor Huxley that he has modified in several respects many of the positions taken in the paper referred to. It is probable that this is the case with reference to the conditional independence of cells. His definition of cells as given in his admirable Text-book on the Elements of Physiology is as follows: "There is a time when the human body, or rather its rudiment, is of one structure throughout, consisting of a more or less transparent *matrix*, very similar in nature to the substance of which the blood corpuscles are composed, and often called *protoplasm*, through which are scattered minute rounded particles of a different optical aspect. These particles are called *nuclei*; and as the matrix, or matter in which these nuclei are embedded, readily breaks up into spheroidal masses, *one for each nucleus*, and these investing masses easily take on the form of vesicles or cells, this primitive structure is called *cellular*, and each cell is said to be *nucleated*." He then goes on to say that "in the present use of the term any *distinct* mass of protoplasm or living material may be called a *cell*," and adverts to the fact that "while in the vast majority of cases the cell contains a nucleus, this is not absolutely essential, and that though very frequently the outer layer of the cell-substance is hardened into a distinct casing or envelope, the *cell-wall*, yet such is by no means always the case."

According to Stricker, Max Schultze was the first who effectually directed the views of histologists away from the idea of the vesicular construction of cells. He defined a cell to be a little clump of matter (protoplasm) with a nucleus. "The importance of this definition, however, did not lie in the fact that the existence of a membrane in many cells was denied—that had been already more or less positively stated before Max Schultze. The essential point was that the identity of the so-called cell-contents with the primary animal substance, or *sarcode*, was clearly recognized." This primary animal substance



had been described, under this latter name, by Dujardin as early as 1835, as constituting gelatinous flesh of the lower protozoan animals in the form of a contractile substance capable of movement. Thus according to this generalization Schwann's doctrine of the cellular structure of the higher animal organisms was extended to the whole organic kingdom, the distinctive protozoan type being *unicellular*.

Schultze takes the embryonal cell as the basis of his definition. "We may see," he remarks, "in the embryonal cells which proceed from the division of the cells of the ovum, the true archetype of a cell, and yet *they consist only of a little mass of protoplasm and a nucleus*. Both the nucleus and the protoplasm are products of the division of similar constituents of another cell. Such cells include a living force in their interior, essentially possessed by the protoplasm, although it is true that the nucleus likewise plays an important part, not hitherto known with sufficient accuracy. The protoplasm is no further isolated from external objects than by the circumstance that it will not combine with the surrounding medium, and that it constitutes with the nucleus a single whole. A distinct membrane may, indeed, appear on the surface formed by the conversion of the outer layer of the protoplasm, but then it must be allowed to be an early indication of a retrograde process. A cell invested by such a membrane can no longer divide, that is a power possessed by the enclosed protoplasm alone. A cell with a membrane differentiated in its chemical characters from the enclosed protoplasm, *is like an encysted infusorial animalcule*."

The coincidence of this interpretation of the cell-wall with the views of Lionel Beale, who wrote about the same time on the distinction between *germinal matter* (protoplasm) and *formed material* (cell-wall, intercellular substance, etc.), is very striking, and has been frequently pointed out. Thus the "simple naked cell" which Frey compares to an amœba is to be taken as the type of a perfect nucleated cell, the cell-wall, when one exists, being indicative of a passage from an active to a passive state.

But, as was stated in the above extract from Huxley's *Physiology*, a nucleus, though generally present, is not indispensable

to a proper conception of a cell. To Brücke is due the merit of having first enunciated this negative proposition, founding his statement on the fact that cells are known to occur in the cryptogamia in which no nucleus is visible. His view derives support from the subsequent discovery of non-nucleated protozoa, such as the *amoeba porrecta*, discovered by Max Schultze in the Adriatic; the *protogenes primordialis*, by E. Hæckel in the Mediterranean, and two non-nucleated monads, namely, the *monas amyli* and *protomonas amyli*, described by Cienkowski in 1865. In view of these and other pertinent facts, Stricker comes to the conclusion that "we must apply in future the histological term cell to the morphological elements of the higher animals, or to independent living organisms, even if we are unable to discover anything more in their structure than that they are little masses of animal sarcode or protoplasm. Nor will any essential change be made in our views, even if it be hereafter proved that there are cases where the nucleus is not only present, but plays an extraordinarily important rôle." He then suggests a caution against the mistake of considering as cells little fragmentary particles of animated matter exhibiting motion. It would be just as logical to apply the term animal to the excised heart (still beating) of a tortoise. "In order that we should apply the term 'cell' to such an isolated fragment of living matter, it is necessary that we should recognize the whole group of phenomena which are characteristic of an independent animal—an independent organism."

It is well known that Dr. Lionel Beale recognized as distinct vital unities particles of germinal matter less than the one-hundredth-thousandth of an inch in diameter, they being identified as functionally such not simply by movements, which would be no criterion at all, but by the fact that they grow by assimilation of pabulum, multiply by division, and under appropriate conditions assume the features of perfect cells.

It only remains to say, in this connection, that when Professor Frey states that protoplasma belongs to the group of albuminoid bodies, we must beware of confounding the *living* germinal matter with the chemical albuminoid proximate principle which may be separated from it by analysis. Indeed, even as

to chemical composition the albuminoid substance, though in some respects the most conspicuous, is not the sole constituent, nor perhaps any more significant than the others. For we hold that the fat, the mineral salts and the water, are just as essential to the constitution of living protoplasm as the nitrogenous principle itself.

In the Transactions of the American Medical Association for 1875, Dr. Louis Elsberg, of New York, has given an interesting statement of the views of Dr. Carl Heitzmann respecting the structure of protoplasm and its relation to matrix substance in the animal body, forming the groundwork of a biological doctrine destined, he thinks, to take the place of the cell-doctrine. According to these new observations of Heitzmann, not only are there contained no "cells" as isolated individuals in any tissue of the body, but no tissue in the body is isolated from the other. Every cell, if we retain such a term, is connected by threads of protoplasm with all the cells in its neighborhood, so as to give rise to a net-work of living matter, and thus as Heitzmann says: "The animal body as a whole is a connected mass of protoplasma in which, in some part, are embedded isolated protoplasma-corpuscles (wandering corpuscles, colorless and red blood-corpuscles) and various not living substances (glue-giving and mucin-containing substances in the widest sense, also fat, pigment granules, etc.)." These and other statements of Dr. Elsberg's paper are illustrated by six figures representing a creeping amoeba, a vacuolized colorless blood corpuscle, cartilage stained with nitrate of silver, which darkens the formed material and leaves the protoplasm clear, cartilage stained with chloride of gold, which imparts a dark violet hue to protoplasm and thus acts in a complementary manner to the silver-staining process, rete mucosum and papilla of the skin, and striped muscle fibre at rest and in contraction. We await further report from competent workers with the microscope before we venture to express an opinion as to the possibility of reconciling these alleged peculiarities of structure with the main features of the cell-doctrine as heretofore accepted.

The subject of Professor Frey's second lecture is the classification of the tissues, and the histology of blood, lymph and

chyle. Adverting to the fact that a scientifically adequate arrangement of the tissues can not yet be established, owing to our as yet imperfect knowledge of the course of development of the elements, the author gives the following artificial classification as serving a useful purpose for presenting the subject in a convenient form to the learner :

A. Tissues of simple cells with fluid intermediate substance :  
(1) Blood ; (2) lymph ; (3) chyle.

B. Tissues of simple cells with scanty, firm, structureless intermediate substance : (4) Epithelium ; (5) nails ; (6) hair.

C. Tissues of simple or metamorphosed cells, with partly still homogeneous, partly fibrous, and not rarely, more firm intermediate substances (connective tissue group) : (7) Cartilage ; (8) gelatinous tissue and reticular connective substance ; (9) fat tissue ; (10) connective tissue ; (11) bone tissue ; (12) dental tissue.

D. Tissues of metamorphosed, as a rule, unfused cells, with scanty structureless intermediate substance : (13) Enamel tissue ; (14) lens tissue ; (15) muscular tissue.

E. Compound tissues : (16) Vessels ; (17) glandular tissue ; and (18) nerve tissue.

To us this arrangement, in so far as it differs from Virchow's classification, loses by the comparison, except in the single point of adding a class for the organized fluids, as representing tissues of simple cells with fluid intermediate substance. We see no advantage in separating enamel tissue and lens tissue from other structures of epidermic origin. The cells have undergone no greater metamorphosis than that which characterizes the fibres of the cortex of hair, and certainly an arrangement which associates muscular tissue with the enamel and lens tissue is far too "artificial" even for a *memoria technica*. With these exceptions the classification is nearly coincident with that of Virchow, which, as a provisional arrangement, appears to us to be nearly unexceptionable.

Professor Frey assumes, without giving the proof in detail, that the red corpuscles of the blood of the second or permanent set are developed from leucocytes. In view of the now accumulated evidence on this point furnished by the careful observa-

tions of some of the first histologists of the age, and cited in his larger work on Histology and the Histochemistry of Man, he is fully justified in dismissing the subject with a simple statement of the fact in the compendium. Nor should we conceive it to be necessary to allude to this subject, which we hold to be now *res adjudicata*, but for the preposterous attempt of a recent American writer to treat these observations with affected contempt and to assert the doctrine of the independent and *de novo* origin of the red corpuscles on the authority of his own *ipse dixit*.

Prof. Flint, in his recently published Text-book of Human Physiology, says: "In many works on physiology and general anatomy, we find accounts of the development of the red corpuscles from the colorless corpuscles or leucocytes, which are supposed to become disintegrated, their particles becoming developed into red corpuscles; *but there seems to be no positive evidence that such a process takes place.*" One would infer that the doctrine in question was founded on pure conjecture, and that there were really no positive observations on the subject. Now not to speak of the observations of Wharton Jones on the gradual process of the transformation of the colorless into the red corpuscles in the human subject, as minutely detailed in his paper in the Philosophical Transactions of 1846, what must be thought of a writer who claims, by his larger treatise at least, in which the same contemptuous silence in respect to recent careful observations on this subject is maintained, to "represent the existing state of physiological science" and yet ignores the observations of Kölliker, of Recklinghausen, and Goluben, as well as the yet more recent investigations of Newmann and those of Bizzozero, who have separately demonstrated the conversion of white into red corpuscles in the red medulla of bones. According to Rollett in (Stricker's Manual of Histology, p. 293) "*both of these observers describe a complete series of transitional forms existing between the white nucleated and the non-nucleated red blood corpuscles, and associate the marrow of the bones consequently with the development of the blood. Still further communications on this function of the bony marrow have just been made (1869) by Hoyer.*"

Again, the same authority (Prof. Rollett, of Gratz,) says that in the case of the blood of the frog, it has been shown by Goluben (Transactions of the Vienna Academy, April 16, 1868), that the amoeboid cells which it contains are subservient to the regeneration of the red corpuscles, *into which they become transformed by a process, all the stages of which may be completely followed.*" ("Stricker's Manual of Histology," American Edition, p. 57.)

On another but kindred topic, that, namely, of the origin of colorless corpuscles, Prof. Flint is to be charged with an equally culpable omission to cite the positive observations of Lortet, of Lyons, which, in our opinion, abundantly refutes the dogma as to their spontaneous generation, which he builds upon the partial experiments of Onimus. This gentleman, according to Prof. Flint, used the clear fluid taken without delay from rapidly developed blisters, which he found ordinarily contained no leucocytes, but which he carefully filtered in order to remove all sources of error. (We may observe just here that such filtration did not remove all sources of error, for if, as Lionel Beale seems to have shown, the germs of protoplasm may be no larger than the one hundred-thousandth of an inch, the filtering paper would not have separated, and no ordinary microscope could have detected them. But let this pass). Prof. Flint proceeds to say: "The filtered liquid contained no morphological elements, but he found, on the other hand, if the liquid were allowed to remain for an hour or more *in contact with the derma*, it always contained leucocytes and epithelial cells. Under these circumstances, even after filtration, the liquid contained a few leucocytes; but after six or seven hours of repose in a conical vessel, the corpuscular elements gravitated to the bottom, leaving the upper portion of the liquid perfectly clear. This liquid, entirely free from anatomical elements, was enclosed in little sacs formed of an animal membrane (gold-beater's skin), and introduced under the skin of a living rabbit. At the end of twelve hours, a few small leucocytes and granulations had made their appearance; at the end of twenty-four hours the fluid had become somewhat opaque, and contained a large number of leucocytes and granulations, and at the end of thirty-six

hours the fluid was white, milky, and composed almost entirely of leucocytes and granulations. \* \* \* The experiments were then varied in order to show the influence of the membrane and the composition of the blastema upon the development of the leucocytes. By modifying the membrane in which the blastema was enclosed, it was found that the corpuscles were developed *in proportion to the activity of the osmotic action.* *When thick animal membranes were used, their development was slow, and in some instances did not take place at all. There was no development of leucocytes in a clear blastema enclosed in a sac of caoutchouc or in glass tubes hermetically sealed; and from this it was concluded that osmotic action is a necessary condition, and that the mere heat of the body is not sufficient to develop these corpuscles, even in an appropriate blastema.*" And Prof. Flint concludes that the spontaneous generation of leucocytes is established by these "elegant experiments." Other more careful reasoners saw an evident source of error in the possible intrusion of young leucocytes from the surrounding connective tissue in a state of irritation caused by the foreign body, and Lortet, of Lyons, proceeded to apply a crucial test. He used for his sacs the same materials with which Onimus had succeeded, even vegetable parchment, but filled the pouch with distilled water, or else a saline solution, absolutely excluding not only organic matter, but all nitrogenous compounds, and yet the liquid soon became peopled with leucocytes. Our authority for this statement is Dr. Burdon-Sanderson (Holme's System of Surgery, Second Edition, Vol. V, on the Process of Inflammation), who repeated the experiments of Lortet and verified his results. Professor Flint makes no allusion to these positive observations, which seem to be absolutely conclusive as to the origin of the leucocytes found in the experiments of Onimus. We regret that these and other instances of similar unfairness and unwarranted dogmatism disfigure an otherwise very valuable exposition of the actual state of physiological science.

Having devoted so large a space to the consideration of the cell-doctrine as the foundation-stone of histological science, we must be content to say of the rest of Frey's compend, that it contains an excellent summary of the leading facts of both

general and special histology, and fully meets a long-felt want on the part of both teachers and students. J. L. C.

Transactions of the Mississippi State Medical Association; ninth annual session; Jackson, Miss. 1877.

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### MISCELLANEOUS.

"Non omnes eadem mirantur ament que."

**The Local Action of Chloral Hydrate.**—In an article in "L' Indépendente" Dr. Guido Tizzoni, of Pisa, observes that the first effect of the application of solution of chloral hydrate to parts deprived of epidermis and epithelium is a transient irritation, varying in degree with the strength of the solution. This is followed by an anæsthetic action, in regard to which the observations of Drs. Coignard, Horand, and Puech have been confirmed by the author.

The irritant action favors the development of cellulo-vascular granulations, and accelerates the cicatrization of solutions of continuity. The chloral acts also as an astringent, and as an antiphlogistic. The irritant action, which is generally of brief duration, having ceased, there is in a few hours an arrest of the inflammatory processes, including suppuration; this appears due to the retardation of the circulation and the constriction of the capillaries, as well as to minute coagula and emboli, which are found in the vessels and cut off or diminish the local supply of blood—a fact which has been established by the experiments of the author and of Dr. Fogliata.

The most important properties of chloral in surgery are those which it possesses as a disinfectant, antiseptic, antiputrescent, and antifermentative remedy. The author has used it for the preservation of flesh, milk, urine, etc.; no change being perceived at the end of two months. He recommends chloral in ordinary surgical practice, as a preservative against local and general infection, and as a restrainer of suppuration.

He describes the experiments and clinical observations which



he has made with regard to the action of chloral, especially as an antiputrescent. The ultimate results were always the same, differences depending only on the amount of chloral used. The solution which he employs is one of ten parts of chloral in fifteen of water.

He has treated, both in hospital and in private practice, many cases of acute and chronic urethritis with injection of chloral hydrate, in the manner recommended by Parona, and has found the result to be rapid cessation of the discharge, and cure of the disease without complications.—*London Medical Record*.

“Glaswolle.”—M. Limousin laid before the Paris Therapeutical Society a specimen of “glass-cotton,” or glaswolle, which is much used in Germany, and especially in Austria, for the purpose of filtration in laboratories. It exactly resembles wadding, but is a little more silky, and slightly crepitates when held near the ear. Bohemian glass is the only kind from which it can be produced, being drawn out at the moment of fusion into threads of an extreme tenuity. Under the microscope these fibrillæ are as delicate as those of cotton, and quite as supple. The glaswolle is of great use in the filtration of acids and alkalies, even when concentrated, as well as of many other substances, such as nitrate of silver, albumen, collodion, Fehling’s liquor, etc. Moreover, filtration takes place with great rapidity, because capillary action is not impeded by the too close approximation of the fibrillæ. The glaswolle neither produces any alteration in the filtered substances, nor does it undergo any alteration from them. It may be also conveniently used for painting parts with chromic acid, nitrate of silver, tincture of iodine, etc.—*Gaz. Hebd.*

The Philadelphia correspondent of the “Boston Medical Journal” says the attendance at the Jefferson and the University Medical Schools in that city is larger than ever before. He accounts for the increase in spite of the hard times, by saying that most likely they reason thus: “There is nothing else to do, let’s be doctors.” He says, “you may have heard the story of Sir Walter Scott’s colloquy with a grave, sagacious-

looking doctor, attired in black, for whom, in a small English town, Scott had sent on behalf of his sick servant. In the doctor, Scott, to his amazement, recognized a Scottish blacksmith, who had formerly practiced as a veterinary operator." "How in the world," exclaimed Sir Walter, "came you here? Can it be possible this is John Lundie?" "In truth it is, your honor, just a' thats of him." "Well let us hear, you were a horse doctor before; now it seems you are a man doctor; how do you get on?" "Oh, just extraordin' well, for your honor maun ken that my practice is vera sure and orthodox. I depend entirely on twa simples." "And what may their names be? Perhaps it's a secret." "I'll tell your honor (in a low voice); my twa simples are just laudamy and calamy." "Simples with a vengeance!" replied Sir Walter, "but, John, do you never happen to kill any of your patients?" "Kill, ou ay, may be sae, whiles they dee, and whiles no; but it's the will o' Providence. Onyhoo, your honor, it will be lang before it makes up for Flodden!"

**Osteotomy in "Genu Valgum."**—At the Congress of Naturalists recently held in Hamburg, an interesting paper on this subject was read in the Surgical Section by Dr. Max Schede. Antiseptists will be pleased to know that the successful results, to which we will shortly refer, were considered in great measure due to the antiseptic precautions and dressings which were adopted in the cases. Dr. Max Schede presented to the Congress a young man on whom he had performed cuneiform osteotomy of both tibiæ and fibulæ. The man had been the subject of exaggerated genu valgum, which had resisted all previous treatment. The legs and thighs were at an angle of about eighty degrees. Antiseptic precautions were adopted at the operation (which was done in February), and Esmarch's bandage was applied. A wedge-shaped piece of bone, three quarters of an inch wide, was excised from each tibia, and the fibula was cut across; the legs were then straightened. At the end of May consolidation was complete, and the operation thoroughly successful. At the same time he reported other cases where the operation had been done with similar success either

for rickets or knock-knees. He mentioned one case in which the tibia had been divided but not the fibula, but the cure was not so complete as in those cases where both bones had been cut. Mr. Howard Marsh recently read before the Royal Medical Chirurgical Society a paper on Osteotomy of the Tibia for Deformities caused by Rickets. He referred to some successful cases in which he had performed this operation at the Children's Hospital in Great Ormond Street. When we consider how helpless the subjects of extensive rickets and severe knock-knees may become, it is a matter for congratulation to think that surgeons are now able to tackle these diseases with such good chances of success, and with so little risk to the patients. —*Med. Times and Gaz.*

**Water-Meters and Waste.**—It is a disputed point whether it is desirable in a large city, with its vast system of sewerage, to check the free use of water. It is claimed that what is wasted in New York is absolutely necessary to cleanse the closets, vaults, sinks, waste-pipes and sewers. The former Commissioner of Public Works, Fitz John Porter, in his last report to the Mayor on this subject, said: "All water goes into the sewers, and the more we can afford to let run through the sewers and private drains, the more effective we render our sewerage system. The introduction of meters would cause people to economize to such a degree as to injure the public health, and would be a plan that would inflict an injury upon our densely-populated city that would be incalculable. The importance of a full supply is too great to be dependent upon one aqueduct, and another should be built entirely away from and independent of the present one, that in case of an accident to one the other might not be affected by it."

While the usual daily consumption in times of sufficiency is claimed to be about one hundred gallons a day *per capita*, it is probable that the losses by evaporation and natural waste will reduce that below sixty-five gallons.

Ancient Rome had nine aqueducts, each more than forty miles in length, and bringing to the city three hundred and twenty-two gallons a day for each inhabitant, and still Fron-

tinus, the engineer, reported that "the supply was only sufficient for all public purposes and amusements."—*Sanitarian.*

**Fetid Feet.**—A very obstinate case of this complaint in a workman is reported in the "Bull. de Thér." by Dr. Ortega. In the manufactory in which he worked he was avoided by his fellow-workmen, and when he entered a room the window would be opened. He had consulted several physicians, but without success. The epidermis of the sole of the foot was white and macerated, and there were little ulcerations at the clefts of the toes and around the nails. M. Ortega advised him to apply compresses soaked with a solution of chloral, which had the effect of rapidly destroying the smell and curing the ulcerations.—*Medical Brief.*

**A Royal Example.**—The high example set by Her Majesty the Queen in requesting that the whole of the members of her household should be vaccinated, and in authorizing a publication of the fact, will have, it may be hoped, a salutary effect. Efficient revaccination after puberty is practically an unfailing protection against small-pox. Mr. Francis Godrich, of West Brompton, mentions this week, that during his great experience, ranging now over half a century, and extending to many thousand cases, he has found in revaccination an unfailing means of protecting the households under his care from the attack of small-pox epidemics. He mentions, also, opportunely, that in his large parochial district (excepting one case), all the cases of small-pox have occurred among the domestic servants of wealthy persons. This certainly points very clearly to the duty incumbent on every head of a household to follow the example publicly set by the Queen; and, seeing the painless and harmless nature of the act, and the vast misery and expenditure, and large mortality due to its neglect, we trust that revaccination will be universally employed. In that case, we need not fear that any epidemic of small-pox would assume important dimensions.—*British Medical Journal.*

**Sunlight Necessary to Health.**—In his last quarterly Report, Dr. John Liddle, the Medical Officer of Health for the White-

chapel District, says: "In building a new class of houses, for the better accommodation of the working classes, it is, in my opinion, essentially necessary, as tending not only to promote their health, but to improve their moral condition, that every room should be light—that there should be no dark corners for the accumulation of dirt—and that the houses should not exceed four stories in height; for, unless the streets are made proportionally wide, the higher the houses the greater will be the absence of sunlight, and thus interfere with the proper ventilation of the rooms. High houses on each side of narrow streets, in which little or no sunlight is admitted, are not healthy. It is manifest that a current of air, without the accompanying heat of the sun's rays, can not be considered as proper ventilation. A current of air passing through a tunnel may, perhaps, by some persons, be considered as efficient ventilation; but I apprehend that few persons with any regard to their health would like to reside therein. I firmly believe that many persons who are compelled to occupy rooms in which the rays of the sun never enter soon lose their health, and find it necessary to change their residence; and this remark applies, although perhaps with less force, to those who are confined to counting-houses during the day in which no sunlight is admitted. Sunlight is especially necessary for the healthy existence of children; and this is strongly pointed out in the evidence of the late Mr. N. B. Ward (the inventor of the 'Wardian Cases,' for rearing plants in towns, and conveying them to and from distant places; a gentleman of great eminence in the medical profession, and who had given much attention to the influence of the temperature, of air, and light on the health and growth of animals and plants) who says, in his evidence before the Commissioners appointed for inquiry into the state of large towns and populous districts, that, as the result of his experience, the influence of light is a matter of the highest importance to the proper physical development of the human species; and whatever stints the growth of a child certainly operates upon his physical capacity for labor; that the amount of disease among persons occupying light rooms is infinitely less as compared with that in dark ones; and that the influence of light, especially solar light, in prevent-

ing the fatal termination of disease, is a fact well known to him. In further illustration of this subject, Mr. Ward quotes a fact stated on the authority of Sir James Wylie, 'that the cases of disease on the dark side of an extensive barrack at St. Petersburg have been uniformly, for many years, in the proportion of three to one, to those on the side exposed to strong light.'—*Public Health*.

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## MEDICAL NEWS.

'Nulla dies sine linea.'

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Another death from ether at Guy's Hospital, London.—In the late epidemic of typhoid fever at Paris, it was found that one in every two who died had suffered from hæmorrhage. Stokes, Trousseau, and their followers claimed that hæmorrhage is a favorable sign—*ex factis vero veritas*.—Dr. Bartholow is now editor of the Cincinnati Clinic. He has unjustly attributed to this Journal and the American Medical Bi-Weekly a course of management inconsistent with the facts. As he has been so informed by letter, it is fair to assume that he will yet do what justice requires him to do.—Analyses of all the opium cures before the Public demonstrate the fact that they are all swindles, and their proprietors impostors; the "cure" sold by S. B. Collins, of Laporte, Indiana, and that manufactured by Mrs. J. A. Drollinger, of the same place, are prominent in this category.—Dr. Skillman, of Lexington, Ky., has recently reported an interesting case of aneurism of the arch of the aorta, in the sac of which was found after death a portion of the manubrium and a part of one of the clavicles.—Fort Wayne, Indiana, is to have a new medical college, perhaps two. New Albany, Indiana, is thinking also of "supplying a want."—A new medical college has been organized at Nashville, Tenn. It is called the "Nashville Medical College." The venerable and distinguished Dr. Paul F. Eve is one of the Professors, and is President of the Faculty. The Faculty consists of fourteen

physicians, almost all of them gentlemen of high position, and all of them physicians of high character. This College gives two graduating courses in one year; no length fixed for the undergraduate period. Two courses, consecutive, only necessary to entitle any one to apply for graduation. Fees \$40. No graduation fee. Two commencements annually. Diplomas conferred at each. The old University of Nashville "has followed suit." Two courses in one year; both graduating courses. Diplomas conferred at both commencements. Students can graduate in nine months; fees \$50. It seems that many of the first-class colleges of the country will now give two graduating courses in one year. Dr. T. A. Atchison, of Nashville, Tennessee, is one of the committee appointed by that immortal convention of cheap-fee medical colleges at Philadelphia, June, 1876, to prevent "double courses" in one year and a nine months' undergraduate period. This gentleman is one of the Faculty of the University of Nashville. Beyond suspicion and reproach, he has simply seen that there are reasons held on the subjects involved by physicians of the highest personal and professional character, and that medical men are not the less distinguished and pure because they do not intend to become clay in the hands of a few potters; or ductile metal to be cast into whatsoever moulds interested parties may forge and fashion.

—The attendance of students of all kinds at Ann Arbor is larger than usual. The old Faculty are teaching homœopaths, but not homœopathy; a vast difference.—Dr. Joseph G. Chinn, of Lexington, Ky., was on the 1st of January married to Mrs. Catherine Lawson, of Fayette county, Ky. The groom is 80 and the bride nearly 90 years of age; the Doctor's third marriage, and the second marriage of his wife. May they be happy.—One of the recent novelties in surgery is the resection of the sacrum on account of a central tumor. The case is reported in the "American Medical Bi-Weekly."—Contrary to the opinion of his physicians, Vanderbilt died at last of perforation of the colon.—Dr. William Mussey, of Cincinnati, Ohio, has, with rare generosity, donated his very superior library to the Public Library of Cincinnati.—The excellent "Peninsula Medical Journal" is no more;

its subscribers killed it by not doing their duty. It has been merged into the "Detroit Medical Journal."—The venerable Dr. Joseph Carson, of Philadelphia, died December 30th.—Samuel Riddleberger, of Kentucky, recently buried, weighed when dead 473 pounds; he had weighed 543.—The last idea in distillation is to use the solar rays for fuel.—The medical class at Edinburgh, Scotland, is the largest on record there.—There is at Vienna a woman who furnishes milk enough for seven children.—Mr. John Jackson, father of the lamented and distinguished Dr. John D. Jackson, of Danville, Ky., died January 7, 1877.—Another death from ether—this time at Rahway, N. J. Boy sound and healthy; aged twelve years.—The National Medical Library at Washington, D. C., is now the largest medical library in the world.—The "London Lancet" states that among the canal population of England the buying and selling of wives is not very unusual.—The same Journal advises that in all medical societies there should be a committee appointed, whose duty it should be to report to the society all members advertising directly or indirectly in newspapers. One or two reports usually are sufficient to quell the nuisance. Medical journals have been known to scare these restive and predatory animals into their holes, and keep them there.—*Verification of Deaths in Paris.*—There are in France certain medical officers appointed for the purpose of the verification of deaths, without whose certificate interments can not take place. Unlike the practitioners in this country, who have to furnish such documents gratuitously, these officers are paid; and as regards Paris, the Municipal Council has this year increased the number and pay of the *verificateurs*. These are now seventy-two in number, receiving together the sum of 158,000 francs, in annual salaries varying from 3,000 to 1,800 francs, according to the populousness of the districts to which they are attached.—*Progres Med.*—*Life Assurance and Criminal Abortion.*—On November 4, 1871, the Mutual Life Insurance Company of New York issued a policy of insurance on the life of one Flora Hatch. The woman died in consequence of a miscarriage produced by an illegal operation performed upon her. The Company refused to pay the money, and the case was



carried to the Superior Court, whence it went to the Supreme Court, which has just given the following decision: The voluntary act on the part of the assured, resulting in her death, was of such a character as to preclude the defendants from assuring against the consequences.—*Boston Med. and Surg. Jour.*—Subject to the payment of certain legacies, etc., Dr. Cesare Alessandro Bressa, by his will dated September 4, 1835, left all his property to the Royal Academy of Sciences of Turin for the establishment of a biennial prize, to be adjudged in the following manner, viz: The interest of the first two years to be given as a prize to that person, whatever his nationality may be, who, during the previous four years, shall have made the most important discovery in or published the most valuable work on natural and experimental philosophy, natural history, mathematics, chemistry, physiology, and pathology, geology, history, geography, or statistics. The interest of the next two years to be given to an Italian who shall fulfill the above-named conditions. Dr. Bressa further directed that the prize should “continue to be distributed in the same order.” The Bressa legacy having now become available, the Royal Academy of Sciences of Turin has given notice that the first prize (value nearly £500 sterling) will be awarded in 1879, and that in accordance with the spirit of the testator’s will, it will choose the best work or discovery, whether the claim be put forward by the author or not. In 1881 the second Bressa prize will be awarded, but on that occasion it can only be given to an Italian.—*Med. Times and Gaz.*—*Sir James Simpson.*—The Lord Provost’s Committee have decided, says the “British Medical Journal,” that the Edinburgh statue of the late Sir James Simpson, Bart., M. D., which is now standing complete in bronze in Mr. Brodie’s studio, shall be placed in the West Prince’s Street Garden walk between Castle Street, and St. John’s Episcopal Church.—*New Style of Practice.*—Medical practitioners in the flooded districts of the country are placed in strange straits to get at their patients. In some instances boats have to be substituted for wheeled carriages; in others, where the water lies less deep, the practitioner can only reach his patient on the upper floor of the house dry-shod by passing

through the lower on a causeway made of chairs and tables; but in view of the precariousness of this footway, some practitioners are contemplating carrying with them a ladder, by means of which they may enter the bed-chamber through the window. The distressing position of the patients under such circumstances, particularly of such as are in childbed, may be conceived.—*Lancet*.—*A New Idea*.—A juror at the Middlesex Sessions, says the "*Lancet*," on Monday last, claimed and obtained exemption from serving on a somewhat novel ground. He was an undertaker by trade, and he represented that his principal business lay in a district in which small-pox was very prevalent, and that last week he had buried a dozen persons who had died from this disease. On this ground he represented that he was dangerous to the health of persons among whom he would have to sit in court, and urged, "I am not fit to be here, I know." The argument was a telling one, and was acquiesced in both by Mr. Serjeant Cox and the jury. Its success will in all probability lead to its imitation on other similar occasions.

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## EDITORIAL.

"Nullius addictus jurare in verba magistri."—Hox.

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**Recent College Movements.**—The Profession have been very much surprised to hear that the old Nashville University and the new Nashville Medical College are, each, to give two graduating courses in every year; diplomas being issued at both commencements, in February, and again in June. Nothing is said as to the length of the undergraduate period; so qualification and not time is to be the test. The applicant is only required to have attended "two courses," and as these will often be consecutive, the applicant may graduate in nine months after commencing his medical studies.

The Nashville Medical College will not exact any diploma fee; the faculty being thus not pecuniarily interested or involved in the result of the ballot cast for the diploma.

It is somewhat remarkable that the President (Dr. Paul F. Eve) of the Faculty of one of these colleges, is one of the former Presidents of the American Medical Association, and is now one of the active Faculty of the College. It is also remarkable that the President (Dr. W. K. Bowling) of the Faculty of the other College, was also a President of the American Medical Association, and an active member of the present Faculty. In this respect, therefore, and in all others, the status of these faculties and the record of their presiding officers and their members, are beyond cavil.

It remains to be seen what criticism will be made by the Medical Press of this country upon the action of these two colleges. The reputable Medical Press has been courteous but caustic in regard to all the questions at issue, when these questions were practically represented by other and equally reputable institutions. Consistency in criticism is said to be an evidence of high character and unblemished integrity in the critic. It will soon be seen how many tried by this test prove to be what they pretend to be. Who is to be declared "*rectus in curia*," and who, like the mock Duke in the Honeymoon, brings to the judicial chair fustian and feathers; silly swagger and unblushing venality.

It really appears as though the best medical colleges in the West have adopted, or will soon adopt, the method of consecutive, rather than that of interrupted and paroxysmal teaching; as though they recognized the truth of what students persistently claim to be the fact, viz., that instruction consecutively given is far more valuable to them than the old system of senseless interruption and the sending of them home for eight months, to retrograde and to rust.

Is it not time for every member of the Profession to give the most serious and sincere attention to a question which so intimately concerns himself? Is it not time for each reader to abandon the old idea, that so long as he has his share of patients, "enough coffee, and meal and bacon," a roof over his head, and nails sufficient to keep up his fencing, that his profession may "go to the dogs," and that the problem of medical education may be committed to posterity? The time is unquestionably near

at hand, when from the increasing number of medical colleges, from the increasing number of sessions, from the practical abolition of any fixed undergraduate period, and from the gradual lowering of the standard for graduation, that doctors in America will be as thick as the locusts in Egypt; and that competition will render the earnings of the physician insufficient to secure not position nor ease but the barest necessities of the most frugal existence.

Is it not time for each one to do something? Can not every reader contribute advice or action or both? The remedy for all this chaos and danger and threatened ruin is simple indeed. Let every medical society take up this question and so deal with it that there shall be established in every State a Medical Examining Board of unblemished character and efficiency. Before this Board summon every student seeking to graduate in any medical college of the State, and every physician coming into the State for the purpose of practicing his profession. Give this Board a liberal fee from every applicant coming before it, and make this fee absolute, and not contingent upon the result of the examination. This once done, what matters it how many colleges there are, how many sessions there be, what fees are paid, or what is the duration of the undergraduate period? Disassociate the teaching from the licensing power, and all the evils which have sprung always and spring daily from Pandora's box will disappear. Position, profit, and quiet will once more be the privileges and the rewards of the physician.

**The Constitution and By-Laws of the Medical College Association.**—If anything could be more absurd than the convention of low-fee medical colleges (in June last), when its members asserted that they were absolutely irresponsible beings, it is this "constitution." It looks like a fragment of the poster-bill of a third-class circus. It is longer than the constitution of the United States. An agglomeration of follies and a very Mosaic of absurdities!! It seeks to prevent colleges from giving two courses in one year, when one of the committee issuing this "constitution" is a teacher in a College proposing to do thus. It is

denunciatory of a nine months' undergraduate period, when one of its framers is in a College allowing this. It seeks to establish an interval between lecture courses, when one of its authors teaches in a College where courses are consecutive. It insists upon a defined undergraduate period, when one of the parents of the "constitution" teaches in a school where this period is indefinite and undefined. The fact is, no one can believe that Dr. Atchison ever fully read this remarkable production. If he did, no one else has done so. It seems to be a museum of curiosities contributed by many; examined by no one. Like Barnum's old museum, it surprises the examiner that any one could have gotten together so much curious trash; and still more like that renowned agglomeration of absurdities, it is fit for but one use—the fire.

**The Virginia Medical Monthly.**—This excellent Journal comes this month, having incorporated with it the Transactions of the Medical Society of Virginia. The Journal contains a very excellent steel-plate engraving of one whom all the Profession of this country love, and are glad to see honored and complimented, Dr. J. Marion Sims. The likeness is excellent, and demonstrates that Time deals kindly and gently with this old and distinguished friend. The Monthly contains its full quota of excellent material, and shows all of its usual excellence, sound judgment and energy. It is reaping a success fully deserved. The Transactions of the Medical Society of Virginia are reserved for future notice. They manifest evidences of unusual excellence, and seem to be better even than previous volumes.

The January Number of the Journal was so much above the usual size, and was therefore so much delayed, that this number has been somewhat reduced to insure an early delivery. The two numbers together still furnish more reading matter than do two of the ordinary issues of the past year. The readers of the Journal will be pleased to learn again that arrangements have been made whereby the Journal for 1877 will be superior to that of any past year. Each issue will contain articles, reviews, clinical matter, etc., from the best pens in the Profession.

RICHMOND AND LOUISVILLE

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## ORIGINAL COMMUNICATIONS.

“Qui docet discit.”

ART. I.—*Remarks on Hæmorrhagic Malarial Fever, especially with reference to the Characters of the Urine.* By L. S. JOYNES M. D., of Richmond, Va., Emeritus Professor of Physiology, etc., in the Medical College of Virginia, and Secretary of the State Board of Health.

In the number of this Journal for the month of April, 1868, there appeared, under the title of “Brief Account of an Epidemic of Jaundice,” a letter, communicated by myself, from Dr. H. C. Ghent, of Port Sullivan, Texas, containing a succinct but graphic description of a disease which had made its first appearance in that region in the summer of 1866, and to which, as the writer stated, some had applied the name of “black jaundice,” because of the deep, bronze-like hue of the jaundice which constituted one of its characteristic phenomena. The disease thus depicted was the same as that now generally known in the Southern States under the name of “Hæmorrhagic Malarial Fever”; and I may remark that the account of it furnished by Dr. Ghent’s letter,\* which was dated February 12,

\* Although it is rather late to make a correction of this kind, I ought, perhaps, to take this opportunity of stating that either through a singular oversight of my own, committed in the haste of copying the letter for the Press, or through an equally singular error of the printer, the word *red* was substituted for *yellow* in that portion of Dr. Ghent’s letter which describes the vomited matters. The sentence should read: “The matters ejected are usually very bilious; generally yellow, sometimes green, and in one case, which proved fatal, they were at times perfectly blue.”

1868, was one of the first, if not the very first, which appeared in any American medical journal. In communicating it for publication, I prefaced it with a few remarks upon the most striking features of this new and interesting form of disease; and as it appears that I am still credited with an opinion which I ventured to suggest (rather than express) on this first report of phenomena altogether novel to me, I must now ask leave to put myself right; for I am unwilling that my medical brethren should regard me as still clinging to ideas which, to them, must naturally seem absurd, or at least grossly erroneous.

In a review of the work of M. Bérenger-Feraud on the "Melanuric Bilious Fever of Warm Climates," and of a number of papers by Southern physicians on "Hæmorrhagic Malarial Fever," under its various designations, which appeared in the "American Journal of Medical Sciences" for January, 1875, the reviewer, after giving a highly interesting summary of the French author's observations and investigations, and contrasting his views with those of American observers as to the cause of the peculiar characters of the urine in the fevers described by them respectively, and which the reviewer assumes to be identical, remarks as follows (p. 176): "But no theory can stand if opposed to facts, and we must therefore temporarily at least abandon that which assumes the existence of hæmaturia in this disease. It gives us pleasure to add, that at least one American physician suggested long before the publication of this work that the discoloration of the urine might be due to the presence of bile. 'It appears to me, however,' Professor Joynes writes, 'very improbable that the red color of the urine was due to admixture of blood, as there is no mention of hæmorrhage from any other organ than the kidney. That the mere presence of the coloring principle of the bile may render the urine red is in fact well known.'" This quotation is made by the reviewer from the communication accompanying Dr. Ghent's letter, above referred to, which is among the papers noticed in the review.

The same communication is also noticed in an elaborate and valuable paper on "Hæmorrhagic Malarial Fever," by Dr. R. D. Webb, of Livingston, Ala., published in the Transactions of the Medical Association of that State for the year 1876, in which

occurs the following passage: "Prof. L. S. Joynes speaks of one of the points of special interest in this disease as 'the occurrence of jaundice without any evidence either of a *suppression* of the secreting action of the liver, or of an *obstruction* of the biliary passages; but on the contrary, with the indication of an *excessive secretion*, the system being, so to speak, *deluged with bile.*' This remark is quoted approvingly by the reviewer of M. Bérenger-Feraud, ('American Journal of Medical Sciences,' January, 1875, p. 176), to corroborate the view of this author, that the dark color of the urine is due to bile."

I fully admit the correctness of these quotations (except the omission of the words "more or less" before "red" in the last sentence quoted by the reviewer), and confess that at first view it seemed to me probable that the red urine in this new form of "jaundice" was due to the presence of bile. But I submit that this was not, under the circumstances, an inexcusable supposition, considering the intense jaundice which was reported as speedily following the first discharge of red urine, and the unquestionable truth of the remark, "that the mere presence of the coloring principle of the bile may render the urine more or less red." Without multiplying citations on this point, I may be allowed to adduce the following statement of Simon ("Animal Chemistry," p. 532): "The color of icteric urine may vary from a saffron-yellow to a yellowish-brown, brownish-red, or blackish-brown"; side by side with which I may place the same author's description of bloody urine (p. 435-36): "Bloody urine . . . . is distinguished by a more or less marked blood-red color, sometimes being of a brown-red, and on other occasions even of a brownish-black tint. No certain conclusions regarding the presence of blood can, however, be deduced from the color alone. I have seen urine in color strongly resembling bloody urine which contained not a trace of hæmatoglobulin." Such resemblances may be caused, he says, by mixtures of the coloring matters of urine and bile; and he insists upon the necessity of resorting to microscopical and chemical tests for the positive detection of blood. As connected with what follows, I may further quote a few sentences with reference to these means of discrimination: "If undissolved blood



corpuscles remain in the urine, as is frequently the case, they sink to the bottom, and form a dark brown-red sediment, in which their forms may be recognized by the microscope. The dark-red supernatant fluid coagulates on the application of heat, in the same manner as ordinary albuminous urine; the coagulated matter, however, in this case is not white, but of a dirty-brown color. Similar appearances are produced by the addition of nitric acid. If the blood corpuscles are perfectly dissolved in the urine, as I have sometimes observed to be the case, the microscope affords us no assistance. The application of heat, and the addition of nitric acid will, however, be sufficient to convince us directly of the presence of albumen and hæmato-globulin."

But my present object is not so much to make it appear that I was pardonable for a suggestion thrown out nine years ago, as to admit without reserve that the opinion thus provisionally advanced was erroneous, and to express my full concurrence in the opinion now universally entertained (so far as I know) by American observers familiar with the disease, that the urine in "hæmorrhagic malarial fever" *does, as a rule, contain blood* (or its elements), and that this is the chief cause—I will not say the sole cause—of that characteristic appearance which has suggested the name now generally given to the disease. I experienced this change of belief at a very early period; partly from my own observations, and partly from the very satisfactory evidence afforded by fuller reports of the disease, which were not slow to make their appearance from various quarters.

Some time in the autumn of 1868 I received from my correspondent, Dr. Ghent, half a dozen or more specimens of urine from a patient suffering with a well-marked attack of the disease, the several specimens corresponding to as many different stages of the malady. Although they had been some fourteen days on the way from Texas, and had become ammoniacal and offensive to the smell, their physical characters in other respects were tolerably well preserved. Most of them were of a deep-red color, like port or claret wine, becoming lighter, but without shade of yellow or green, when the vial was inclined or shaken, so-as to present the fluid in thin layers. One speci-

men, though not distinctly red, presented that peculiar *smoky* appearance which is regarded as so characteristic of blood when present in the urine in small quantity; and one, which had been passed after the abatement of the grave symptoms, was free from discoloration, and nearly or quite normal in appearance.

With the exception of this last specimen, the mere inspection left little doubt on my mind that all of them contained blood. But, on seeking to confirm this *prima facie* evidence by surer proofs, I failed to discover with the microscope in any of the specimens, after a careful search, a single blood corpuscle, whether of normal or modified form, or anything which could be fairly identified as a fragment of one; a fact which seemed to admit of a reasonable explanation by the length of time which had elapsed before the urine was examined, and the decomposing changes which had taken place in the fluid. The chemical tests, however, yielded perfectly characteristic results, the application of heat and the addition of nitric acid alike producing the dirty-brown coagulum of albumen and altered hæmatin described by Simon in the passage already cited. The indications were as unmistakable as when a blood-stain on a textile fabric, somewhat darkened by the lapse of a few days' time, is dissolved and subjected to the same tests. Very different results would follow the action of nitric acid, if the urine contained the coloring matter of bile, along with albumen; for we would then have the conditions of Heller's test for bile, in which a solution of albumen is added to the urine supposed to contain bile, and nitric acid added, so as to coagulate the albumen. "If bile is present, the coagulum thrown down by the acid will have a more or less distinct *dull green* or *bluish* color, quite different from the white or pale fawn color which it would otherwise have" (Bowman, "Medical Chemistry"). Certainly, in the specimens examined, nitric acid gave no indications of the presence of bile pigment.

In the letter accompanying these specimens, Dr. Ghent disposed of the objection which I had made in the communication published with his former letter—that he had made no mention of hæmorrhage from any other organ than the kidney—by stating that it was a common thing for blisters drawn on

patients laboring under this disease to fill with bloody serum—an observation since frequently confirmed by others; while hæmorrhage from the stomach, bowels, and other organs, has been repeatedly observed.

Having seen and examined the urine of one patient for myself, I was prepared to give full faith to the reports published from time to time, in this Journal and elsewhere, by competent observers in different Southern States, who generally concurred in ascribing the color of the urine to the presence of blood. While many of these observers did not resort to the microscope or to chemical tests to confirm their impressions, it seemed scarcely credible, if they were all mistaken, that they should so generally describe the urine of a "bloody color," "a bright claret color," "a bright cherry color," "a dark port-wine color in bulk and by reflected light, but when seen in smaller quantity and by transmitted light, a cherry red," etc.; and should seldom or never mention those shades of color which bilious urine is most prone to assume, viz., saffron-yellow, yellowish-brown, greenish-brown, the color of porter, becoming bright yellow in thin strata, or when the urine is diluted, etc. While it is quite true, as already stated, that bilious urine sometimes presents such a tint as to render it doubtful whether it contains bile or blood, it far more frequently presents one of the hues just specified.

Quite a number of observers, however, soon furnished all the confirmation desirable in the way of microscopical and chemical evidence. When, for example, Dr. R. F. Michel, of Montgomery, in a paper published in 1870 (*Objections to the term "Purpuræmia" being applied to the disease known as "Hæmorrhagic Malarial Fever"*), declared that of twenty-eight specimens of the urine in this disease, he had found blood corpuscles in twenty-six, was there any longer room for doubt in the mind of any one acquainted with his competency as an observer, and his entire good faith? And when the statement of Professor Chaillé, of New Orleans, in a letter to Dr. Michel, "that in malarial hæmaturic urine much the larger proportion of the specimens examined by me undoubtedly contained blood corpuscles," and the concurrent testimony of Prof. N. F. Lupton,

Professor Joseph Jones, Dr. James Tyson, and others who might be named, were duly considered, it seemed to me that further skepticism was without justification.

Chemical proof of the presence of albumen and hæmatin, derived from the action of the tests already referred to, was furnished from various quarters; and it was even stated by Dr. Mabry, of Alabama (whose observation has since been confirmed by Dr. Norcom, of North Carolina), that the discharge of blood is in some cases so free that it will coagulate in the vessel into which it is received.

In view of this array of evidence, it would be much easier for me to believe that the fever of Senegambia, described by M. Bérenger-Feraud and the fever which has awakened so much interest in our Southern States are distinct diseases, than to believe that so many capable and conscientious observers who have studied and described the latter have all along deceived themselves, and mistaken bile in the urine for blood.

But I have a little more testimony of my own to offer. In the month of August, 1870, I encountered in my own practice in this city a case of what appeared to me to be hæmorrhagic malarial fever, but of a comparatively mild type. The disease had been contracted in a malarious district in lower Virginia, where the first paroxysm, simple in character, occurred. The patient having returned to the city by rail, I was called to see him after the onset of a second (or perhaps a third) paroxysm, when I observed that his skin and conjunctivæ presented a well-marked icterode hue, and that his urine was decidedly red, and evidently containing blood; but the severe bilious vomiting and the indications of great prostration of the vital powers, which generally mark the disease, were absent. The urine, when subjected to microscopic examination, was found to contain blood disks, and the chemical tests likewise yielded satisfactory proof of the presence of blood; but the addition of nitric acid developed none of the tints indicative of the presence of bile pigment. The patient did well under the prompt and liberal use of quinine by the mouth and by the rectum, the blood speedily disappearing from the urine.

In October last I was requested to examine a specimen of

urine sent to the city for the purpose by Dr. R. H. Cox, of King and Queen County, in this State, and stated by him to be from a well-marked case of hæmorrhagic malarial fever, with which disease he had already become familiar by experience. I received the urine on the third day after its discharge, but it had already lost its acid reâction, being nearly or quite neutral. It was opaque and of a very deep-red color, like that of the darkest-colored claret, but bright red when shaken and held between the eye and the light. On standing a short time it let fall a copious deposit of a dull white color, and very different in appearance from the dark-red sediment of blood corpuscles which occurs in urine holding those bodies in suspension; and the supernatant fluid did not clear up from the subsidence of the deposit. Heat and nitric acid both threw down in abundance from the supernatant fluid the coâgulum characteristic of blood. But careful examination with a good microscope detected not a single red corpuscle, whether entire or undergoing disintegration. There was nothing visible either in the fluid or the sediment exhibiting any probable relationship to those bodies. The white sediment was found to consist of numerous granular casts, and an abundance of amorphous granular matter. None of the casts presented a trace of blood disks, and the free granules looked not in the least like débris of these bodies, but altogether like the granular matter composing the casts.

Once during this examination, I saw in the field of the microscope a body which presented the appearance of a convoluted knot of capillaries, as if one of the Malpighian bodies had been exfoliated from the kidney during the intense congestion of the febrile paroxysm. Professor Joseph Jones is quoted by Dr. Norcom (Transactions Medical Society of North Carolina, 1874, p. 33) as having observed the same thing. At first view there might appear to be an anatomical difficulty in the way of the expulsion of a Malpighian body through the channel of the corresponding uriniferous tube; for the mean diameter of the Malpighian bodies, according to Todd and Bowman, is 1-104th inch, the minimum 1-144th inch, while the extreme diameter of the convoluted portion of the tubes is about 1-150th inch, and of the straight portion somewhat less. But supposing one

of the bodies in question to become detached by rupture of the afferent and efferent vessels which compose (so to speak) its stem, and its size to be considerably reduced by the complete emptying of its tuft of capillaries, may we not conceive that it might be forced along through the tube by the pressure of fluid (urine and blood) behind it; the delicate walls of the tube dilating sufficiently under the pressure to give it passage?

Here again, I should add, there was nothing in the action of nitric acid to indicate the presence of bile pigment. I can say nothing further from personal observation as to the characters of the urine in this disease; but I submit that the few observations detailed, taken in connection with the ample evidence of others, already referred to, do not leave me at liberty to deny or doubt that the presence of blood in this secretion is the general and principal cause of its peculiar discoloration.

I might even strengthen this conclusion by an appeal to evidence furnished by M. Bérenger-Feraud himself and his American reviewer; for the former, as quoted by the latter, acknowledges that M. M. Hogoulin, Bories, and Pellarin, whom he admits to have seen the same fever as that described by himself, all testify that they detected blood corpuscles in the urine with the microscope, and that "the last-named gentleman says he never failed to find blood disks, except when the urine was alkaline"; a condition in which, as is well known, they may speedily disappear by undergoing solution. The reviewer in a note (p. 171) frankly states that Prof. DaCosta, of the Jefferson Medical College, had informed him that he had "examined microscopically three specimens of urine presenting the characters described in the text, and *in all of them detected abundance of blood corpuscles*. In two cases, the specimens were sent to him from a distance, but were in a good state of preservation when examined. In the other case the patient, who had a typical attack of malarial fever, was under his own care in this city, although the disease was contracted in Maryland."

It does not appear from the review that M. Bérenger-Feraud, failing to find blood disks, made any such careful chemical search for hæmatin as he confessedly did for the biliary matters. Had he done so, he would doubtless have elicited indica-

tions of its presence in greater or less quantity, along with the albumen which he admits to be present; assuming, that is to say, that the fever observed by him was identical with that which has claimed the attention of our Southern physicians during the last decade.

In this connection it is proper to explain, that in maintaining that the urine in the latter disease contains *blood*, it is not contended that the red corpuscles in the blood thus lost always or generally hold the same proportion to the other constituents that they do in healthy blood, or that all the hæmatin which escapes is contained within a proportionate number of red corpuscles; nor even that *any* of these bodies are invariably present when hæmatin and albumen are demonstrably so. There are satisfactory reasons for believing, with many who have observed and described the disease, that there occurs in this fever, especially in the graver cases, whether under the direct influence of the malarial poison or under that of the biliary matters contaminating the blood (most probably the former), a disintegration or solution of the cell-wall of the blood-disks, whereby the hæmatin is set free in the circulation, and thus finds an outlet through the kidneys; so that on examining the urine, while much albumen and hæmatin may be present, we may find but few blood disks, or even none. Thus Dr. Webb, in the paper before referred to (p. 203), in describing a specimen of urine examined by himself and Dr. Houston soon after it was voided, states that while it gave "a copious dark-brown deposit" when heated in a test-tube, and on the addition of nitric acid, it presented under the microscope "*granular casts, broken-down blood corpuscles, with a few distinct blood disks, and granular matter.*" In the same urine Dr. Tyson subsequently found "hæmatin in large amount," and "albumen one-fifth of bulk tested."

In like manner Dr. Mabry says with reference to a case reported by him in this Journal (January, 1872), that while blood corpuscles were plainly visible, "in comparison to the entire mass they constituted a *very inconsiderable part.* This is *very generally the case.*" Dr. Greene even expresses the opinion in the succeeding number of this Journal, that blood

corpuscles are never present, and that it is free or escaped hæmatin that colors the urine; but this opinion is hypothetical, and does not rest upon actual microscopic study of the bloody urine.

When several days have elapsed before the examination is made (the urine having had time to become neutral or alkaline), and notwithstanding the presence of hæmatin and albumen no blood corpuscles can be discovered, as in two of the specimens examined by myself, it is, of course, impossible to say positively whether they were absent from the beginning, or whether, having been originally present, they have disappeared in consequence of the chemical changes occurring in the urine. No doubt the latter is the true explanation in many instances. "The corpuscles may disappear very speedily if the urine be of very low specific gravity, or ammoniacal" ("Roberts, Urinary and Renal Diseases," p. 109). But the opinion already expressed, that the former state of things exists in a certain proportion of cases, the condition being that which has received the designation of "hæmatinuria," or "false hæmaturia," is strongly supported both by reason and analogy. Of this condition, to the occasional occurrence of which attention was long ago called by Vogel and others, Roberts (Op. Cit., p. 117) remarks: "The urine in such cases assumes a deep-red or blackish-red color, very much as if it contained blood; but no blood disks can be found under the microscope, nor any fibrin. This condition is invariably accompanied by the presence of albumen in the urine. It is caused by rapid destruction of the blood disks in the blood vessels, such as occurs in that state which is known as 'a dissolved state of the blood,' in septic, pyæmic, and putrid fevers, and in some extreme cases of scurvy and purpura. In such cases hæmatin is set free by the disintegration of the red disks, and appears in the urine." He also mentions (on the authority of Vogel) the possibility of inducing this condition artificially in animals by the injection of substances into the veins which are known to dissolve and break up the red disks; also by the inhalation of carbonic acid and arseniuretted hydrogen gases.

In this connection the analogy of "intermittent or paroxysmal hæmaturia," which has attracted considerable attention



both in Europe and in this country during the last ten years, that is to say during the period in which hæmorrhagic malarial fever has become familiar to Southern physicians, is of special interest. In the "bloody urine" passed during the paroxysms of this disease, Sir William Gull found in most cases only hæmatin, and not blood corpuscles; and Dr. Greenhow, "only occasionally some stray blood corpuscles." In some cases, however, many of these bodies have been found, but it seems that they are prone to speedy disintegration and disappearance. Dr. Webb, in the paper before quoted, has very appropriately introduced an interesting and illustrative notice of this disease, especially as observed in Great Britain.

A rigid stickler for precision in pathology and in nomenclature might refuse to admit the existence of *blood* in the urine in any case in which the red corpuscles are not to be discovered by a competent microscopist, and might deny the applicability of the term *hæmorrhage* to any such case. But certainly the hæmatin is as characteristic an element of blood as the cells which contain it; the former is its distinctive chemical element, as the latter are its distinctive morphotic or structural element. And if we may properly style the saffron-yellow or porter-colored urine of icterus *bilious*, even when not a trace of the biliary acids or cholesterine can be detected in it, but only bile pigment, we may just as legitimately call urine *bloody* which contains the peculiar coloring matter of the blood, along with albumen, though no blood corpuscles be present. We know for certain that the hæmatin has come from *corpuscles which have existed*, though they exist no longer. Their disintegrated and dissolved remains still exist (including the hæmatin), but without the original visible form and structure.

With reference to the presence of *bile*, or at least its coloring matter, in the urine of hæmorrhagic malarial fever, I have not raised, and do not propose to raise, any question. That the nitric acid test gave no indications of its presence in the specimens which I have had an opportunity of examining, I have indeed stated; but I am aware of the objections which may be made to the sufficiency of this test under the circumstances; and that bile pigment at least is often present is proved by the

most satisfactory evidence, and appears indeed to be so generally admitted, that it is needless to adduce testimony on the subject. It would be strange, indeed, if it were not *generally* present in greater or less quantity, when we consider the jaundice, often most intense, which is so marked a characteristic of this fever. Even Dr. Webb, who adopts the view of Dr. Roberson, of Alabama, and Dr. Greene, of Georgia, that the icterode hue of the skin is not due to bile pigment but to altered hæmatin, as true in the majority of cases, admits that in a certain proportion bile does contribute its coloring matter to increase the intensity of the jaundice, and that then this coloring matter passes into the urine and may be there detected.

As it is not my purpose to consider fully the history and pathology of a disease which I can contribute so little from my own observation to elucidate, I resist the temptation to dwell on the many interesting points which strongly invite discussion. A few words in relation to one of the most interesting of these, viz., the real cause of the jaundice which appears so suddenly while the liver is pouring out bile in profusion, and no apparent obstacle exists to its free passage into the alimentary canal, from which it is abundantly discharged by vomiting, and often by purging. Theoretically, the jaundice may be referred to reabsorption of the superabundant biliary secretion from the stomach and intestines, the biliary ducts, and the liver itself, though there be no obstruction; to compression of the biliary ducts by the congested liver, creating a *partial* obstruction, so that while much bile passes through, a portion of the excessive flow is kept back and reabsorbed; to the production of bile pigment in the blood more rapidly than it can be thrown out by the actively-secreting liver; to a disturbance of the hepatic circulation, attended with increased blood pressure on the side of the hepatic artery and portal vein, and diminished pressure on the side of the hepatic veins, which would naturally cause a portion of the bile secreted to be taken up by the radicles of these vessels from the secreting structure of the liver, and so conveyed into the general circulation (Frerichs); to the hæmatin of the disintegrating blood corpuscles, which undergoes spontaneous changes in the circulation, such as we see in the

yellow rings or shadings which appear around blood extravasated under the skin (Drs. Webb, etc., above quoted). But perhaps the true key to this problem, certainly that which seems to accord best with the phenomena of the disease, may be found in the following passages from Niemeyer's chapter on "Hæmatogenous Icterus" ("Text-Book of Practical Medicine," Vol. I p. 684). "The views regarding the occurrence of jaundice without retention and reabsorption of bile have totally changed since the observations of Virchow, Kühne, and Hoppe-Seyler have shown that bile-coloring matter may be formed from the free coloring matter of the blood without the action of the liver; and we may induce artificial jaundice in animals by injecting substances that dissolve the blood corpuscles.

There is now no doubt that some of the formerly enigmatical forms of icterus are due to the disintegration of blood corpuscles, and the transformation of the freed coloring matter circulating in the blood into bile-coloring matter. This is particularly true of those cases of icterus occasionally caused by poisoning from chloroform or ether; for as experiment proves, these substances possess the power of dissolving blood corpuscles. . . . This mode of origin is very probable, though not absolutely proved, for other varieties of jaundice, as in that occurring after snake-bites, in that observed constantly in yellow fever, quite often in recurrent (relapsing) fever, septicæmia and puerperal fever, and more rarely in other infectious diseases, and acute diseases accompanied by severe fever."

The destructive action of the malarial poison upon the blood disks is so well proved that none will question it; and if we admit that under such intense and concentrated action of the morbid agent as that which induces an attack of hæmorrhagic malarial fever, this destructive effect is unusually rapid and extensive; the applicability of the above view to the icterus occurring in this disease becomes at once obvious, and the relationship between that symptom and the hæmaturia receives important elucidation.

Whether hæmorrhagic malarial fever is identical or not with the fever of Africa described by M. Bérenger-Feraud, is a question which must be held for the present *sub judice*, to be

decided by further investigation in both fields. The solution of the various interesting points connected with the pathology of the former is the most interesting task which can engage the attention of those of our confrères who enjoy opportunity for the study; and they who, by the necessary series of careful observations of the clinical history of the disease, and examinations of the urine, the blood, and the organs after death, shall complete our acquaintance with this new enemy, so full of terrible interest, will receive the hearty thanks of the Profession, and earn an honorable distinction. Here, as in many other instances, therapeutics have gone in advance of pathology, and the true principles of treatment are better settled than the history and rationale of the morbid phenomena.

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ART. II.—*Observations in Regard to the Yellow Fever Epidemic of 1876 upon the Coast of Georgia.* By JOSEPH P. LOGAN, M. D., Atlanta, Ga.

The following observations are based upon an investigation by the Board of Health of the State of Georgia in regard to the causes of the late epidemic of yellow fever in Savannah, Brunswick and other minor points upon the coast of Georgia, and at Macon and Augusta, in the interior, and constitute the conclusion of an unpublished report to the State Legislature by the Board, of which the writer is a member. Being chairman of the committee appointed by the Board to prepare the report, and the author of this portion of it, he has taken the liberty of contributing it to your Journal, in advance of its publication in the volume of Annual Transactions, which will appear some time during the month of February, 1877.

For all practical purposes it is not necessary to demonstrate whether yellow fever is always imported, or whether under certain peculiar and exceptional circumstances it arises upon our coast from local causes alone. That it can be imported and will or can become epidemic from the neglect of proper sanitary regulations in certain localities, will not be questioned. That it may be imported and not become epidemic, in the

absence of the circumstances which favor its propagation, will also be admitted without discussion. The very warm contest, therefore, which has been carried on for many years in regard to the exotic or local origin of yellow fever does not seem to be justified by the necessities of the case, or the importance of arriving at conclusions of a definite character with reference to the possibility of excluding it altogether *as an epidemic* from our shores. Let the facts of importation or of local origin or of both be as they may, no argument is needed to establish the proposition that no means of preventing the occurrence of yellow fever should be neglected which could by possibility be brought into requisition.

The evidence in connection with the history of yellow fever, and that especially bearing upon this investigation and developed during its progress, that the disease was probably imported is very strong, and the evidence that the disease may have originated from or was aggravated by local causes is sufficiently strong to arrest our most intelligent attention, from the fact that, whether true or not, equally serious results may occur from a neglect of local sanitary precautions in furnishing the favorable conditions for its propagation when introduced from abroad. In the case before us, so far at least as Savannah is concerned, it would seem that there was no sufficient reason why the disease should not have been imported, from the admitted inefficiency of what has been called by sanitarians "External Hygiene" or "Quarantine," as found on our coast, or, upon the other hand, no reason why this or any other disease possible to the locality might not have originated in Savannah from the great neglect of its internal hygiene. The value of a properly-regulated system of quarantine can not be successfully controverted. The value of an enlightened and thorough system of internal sanitary regulation can not be estimated. In both points of view the facts developed in regard to the recent epidemic of yellow fever upon our coast is a sad commentary upon the wisdom and fidelity of both State and local authorities. That a more rigid and effective system of quarantine, and one at the same time judiciously adapted to the wants of commerce as well as to the hygienic welfare of

communities, should long since have been adopted either by the State or National Government, is readily established by a very superficial glance at the subject. It is admitted that "the means of protection attempted to be embodied in the first crude and imperfect system of quarantine, and the erroneous manner in which these were carried into practice, not only rendered them unavailing as a protection from the introduction of disease, but caused them often to become in themselves agents of positive mischief." (Third National Quarantine and Sanitary Convention, New York, 1859.) But that quarantine has now established itself as one of the useful institutions of the age, and is to continue to maintain and enlarge the character it has for several centuries enjoyed as *the only safe preventive system for the preservation of public health from the introduction of diseases from abroad*, may be regarded as a proposition settled beyond cavil. But even now, with the overwhelming evidence in its favor, it has hitherto been impossible to obtain for it from our legislators the laborious and accurate investigation required to comprehend the intricate, vexed and still to some extent unsettled principles which have a direct bearing and a controlling influence upon the subject.

The question is constantly asked, whether any system of quarantine is likely to be effective in preventing invasions of yellow fever? This question may be confidently answered in the affirmative; and it may be stated that the objections to quarantine are largely based upon ignorance of the facts connected with the operation, or of the origin of the disease it is designed to limit, and upon the selfishness of commerce exaggerating the inconveniences necessarily attendant upon its execution and magnifying the obstacles to traffic, and thus producing a false impression as to the real interests of localities which, under a proper system of quarantine, would really be benefited instead of being injured by a plan which might be adopted affording an absolute protection. It is significantly remarked by another, and strikingly illustrated by our recent epidemic (quarantine on the Southern and Gulf coasts by Harvey E. Brown, M. D., U. S. Army), "that a strong argument may be found in favor of quarantine in the varying aspects of public opinion at the South."

"It is found that during periods of health the sentiment of the Southern people is strongly opposed to quarantine, but should there be a danger of the approach of disease, it is astonishing what a unanimity there is upon the subject. The Press makes fervent appeals to the Boards of Health to increase the efficiency of quarantine; leading men both in and out of the Profession use all their influence to urge its establishment, and should the disease unfortunately break out, the authorities are denounced in the severest manner for their neglect. The medical Profession may prove to their own satisfaction that the disease is of local origin, but the community does not believe it, and in times of pestilence they see what dreadful losses accrue to them from the prevalence of the disease, *and all are quarantineists.*" Without undertaking at this time to elaborate such an inexhaustible subject, we will state in this connection that the argument drawn from the history of epidemics of yellow fever in the United States is altogether in favor of its importation, as exhibited briefly by the fact that its occurrence is in localities in commercial connection with the infected ports, and that the first cases are usually those who have been in some way, either directly or indirectly, associated with the vessels engaged in such commerce, or that the disease has first appeared in the vicinity of modes of transit by which the disease may have been conveyed, or it has occurred near the docks or in the nearest points of habitation to the harbor or to the termini of lines of communication inland from such ports.

The recent epidemic upon our coast affords, upon the whole, no exception, but a confirmation of the fact just stated. The disease was unquestionably introduced into the city of Brunswick through her port, having first appeared in connection with the vessels in the harbor, and having gradually spread throughout the town from that quarter; and almost as certainly so in regard to Doboy and the Isle of Hope to points upon the Central Railroad and to Macon and Augusta. The facts in regard to all these localities amount almost to a demonstration; or, to say the least, are absolutely convincing; and while such positive evidence may be wanting in Savannah, from the inability to trace directly the line of infection, and from the un-

questionable complication of local causes, doubtless largely concerned in the extensive and malignant character of the epidemic, the point at which the disease first appeared; its connection with the sailor boarding-houses; the fact that these particular localities were in no worse condition than in former years, and upon the presumption that they (if furnishing the germinal principle of the disease) *should be affected every year*, furnish an inferential argument, which is difficult to resist, that Savannah was no exception to other localities in the origin of genuine yellow fever during the year 1876. We find also that the course of the fever in this epidemic was, to a great extent, the duplicate of its history in other localities in following the lines of trade and travel, as illustrated on the Gulf Coast in Louisiana and Texas. But while it is not designed to discuss this subject fully, it would be a manifest injustice to fail to indicate the fact that the direct argument is equally conclusive as to the efficacy of quarantine with disinfection, as strikingly exhibited in connection with its practical working in the ports of New York,\* New Orleans, Philadelphia, Baltimore, Natchez, on the coast of Texas, and elsewhere.

In New Orleans and Galveston, especially in constant connection with infected ports, have the results of quarantine with disinfection "in transitu" been strikingly manifested, and in 1875 and 1876 the additional precaution had been taken to re-disinfect all vessels from the tropics after being laid to their wharves in the city and upon the discharge of their cargo; and it is stated that in no vessel so treated has a case of yellow fever appeared during its stay in the city. But we are warned that a whole volume might be written upon this branch of the subject alone, and that the time and the circumstances do not warrant its exhaustive consideration. It is admitted, as already intimated, that in Savannah particularly, and, probably to a

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\* In the past season 363 vessels arrived at New York from ports at which yellow fever was prevalent, and on 99 of these there were cases of this malady, yet no cases of the fever occurred in that city, save such as came by rail from infected cities in the South. By quarantine regulations, embracing disinfection and a limitation of these vessels to the transportation of cargo and crew, these results were accomplished. (Health Officer's Report).



greater or less extent, at the other points where the fever prevailed, local influences operated largely in extending the disease and in furnishing an element of malignity constituting a most important factor in its epidemic character, and doubtless originated a severe type of malarial or zymotic or blended fever, forming a large part of the prevailing pestilence and adding immensely to its mortality. We can not speak too strongly of the unfavorable sanitary condition of the city of Savannah, and it is only now referred to as the basis for the further suggestion, as an indispensable necessity to the permanent salubrity of that city, that there should be, in our judgment, the most radical change in its drainage, sewerage, and water supply. The low grounds surrounding the city, as with a cordon of malarial influences, should be thoroughly and systematically drained at whatever cost.

The excrementitious and foul decomposing matter should be removed entirely from the city, rapidly, effectually, and inoffensively, in accordance with plans well understood and in successful practice in a number of the cities of Europe and of this country. If a system of sewerage or water-carriage is adopted or extended at all, which, in our judgment, is of doubtful policy and a question requiring the gravest and wisest consideration, it can not be safely and efficiently done without a large addition to the water supply, furnishing the conditions for a rapid and complete removal of excrement and foul fluids by a frequent and thorough flushing of smooth sewers, to be emptied into the Savannah river or some other stream at a much lower point than the present entrance of Bilbo's canal,\* thereby avoiding the possibility of contamination of the air of the city by foul exhalation and the water supply, which it is altogether possible, is to some extent in danger from the present location of the debouche of the sewerage matter. But whether this or a daily or weekly removal of excrement by wheel-carriage is adopted, only allowing other foul fluids and the drainage to enter the sewers, there should be no further deposit of such matters in the soil, to still further inevitably contaminate the already poisoned wells of the city, if they are to be relied upon at all

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\* The present outlet of the main sewers.

to supply water to the people. And surely nothing can be more manifest than the absolute necessity for a change to a much higher point on the river of the source from which the reservoir is filled, and for a very large increase in the amount of water to supply any additional demand which may be needed by the possible abandonment of the wells for drinking purposes, but most certainly for the thorough and constant flushing of the sewers should the policy of thus removing the excrement be still continued and extended. While we have thus endeavored to bring into review such points of the late epidemic as seemed to be vital to the present consideration of this subject, its full and comprehensive history must be deferred to a time when all the facts have been gathered and time has been allowed to analyze them in the light of all their developments, and when the investigation has been freed from the necessary errors, prejudices, and antagonisms of the present.

And in final conclusion it is our firm conviction that, with a proper regard to the laws of health, as demonstrated by sanitary science in connection with an enlightened system of external and internal hygiene, Savannah or Georgia should never again be visited by so desolating a scourge. That these questions, involving the welfare of large portions of her people in their means and health, and the value of lives and money beyond calculation, should become the subject of the benevolent care, as well as of legislative interference and control upon the part of the State, is, in our judgment, the imperative duty of the hour.

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ART. III. — *Iron and Alum Mass.* By WILLIAM WHITE, M. D., Abingdon, Va.

Virginia is peculiarly rich in mineral springs. The old and justly celebrated watering-places have not lost caste, but those who have testified to the merits of these waters must at least be willing to concede efficacy to other waters, celebrated of late years for the relief and speedy cure of many aggravated forms of disease.

From time to time the virtues of mineral waters have been brought to the notice of the Profession, and, as seems strange, they are spoken of as specifics for the cure of many ailments, without regard to their nature and cause. Mineral waters and their products are remedies of great therapeutic value; the sensible changes produced by them in the blood and secretions afford strong evidence of their physiological action.

In the administration of medicine, even in minute quantities, the physician expects that its value will be shown in the effect produced; so it is with mineral waters and their products; for mineral waters hold in solution the medicines used in practice, particularly those of a nature to produce purgation, diuresis, and diaphoresis; to relieve acidity and to build up the entire system. To produce this latter effect, the physician is constantly looking; to this he directs his thoughts and energies.

I have been induced to contribute this article simply to induce the Profession to try the efficiency of the "Iron and Alum Mass," furnished from the "Seven Springs" of Washington County, Virginia. I have no other interest in view, and I do this, believing that every physician is bound to indicate remedies of value, and to do this with that independence which should characterize those connected with the medical Profession. I am not asking the Profession to try a "cure all." This is not a remedy to be placed side by side with Mother Noble's soothing syrup, Jaynes' cure all, Bull's pills and sarsaparilla, or even Hostetter's stomach bitters. This is Nature's product truly, as will be seen in the accompanying analysis:

In 100 parts aluminum sulphate.....	15.215
" " ferric sulphate (per sul. iron).....	4.623
" " ferrous sulphate (protosul. iron).....	412
" " nickle sulphate.....	162
" " cobalt sulphate.....	014
" " manganese sulphate.....	257
" " copper sulphate.....	008
" " zinc sulphate.....	301
" " magnesium sulphate.....	16.006
" " strontium sulphate.....	trace
" " calcium sulphate.....	17.538
" " potassium sulphate.....	060
" " sodium sulphate.....	223
" " lithium sulphate.....	019
" " ammonium sulphate.....	022

In 100 parts	sodium chloride.....	326
" "	calcium fluoride.....	trace
" "	calcium phosphate.....	trace
" "	silica.....	1.504
" "	organic matter.....	123
" "	water.....	42.938
		99.759

This analysis not only indicates the different diseases to which the ingredients mentioned are applicable, but the material analyzed can be safely recommended for especial diseases. To these we will direct attention, and we here present cases illustrative of the position assumed.

It is a well-known fact that most diseases are brought about by improper indulgencies, and it is owing to a want of care that many females suffer from peculiar maladies. The disorders of digestion are always associated with disorders which induce constitutional disturbances, and especially with nervous symptoms. As a consequence of this, the patient grows thinner, weaker, easily fatigued, sleeps badly, has palpitation, an irritable temper, depression of spirits, is hypochondriacal, with wearing pains across the loins, defective nutrition of the skin, etc. Now these symptoms, whilst regarded by some as trifling are by others considered grave and significant.

The symptoms described were those of a gentleman who applied to me for something to relieve "indigestion." He had been treated by one or two old physicians, and had taken several ounces of mercury and jalap, which had failed to give relief. In fact, the mere mention of something to "operate upon the bowels" created something like nausea. I at once put him upon the Iron and Alum Mass; a pill as large as a pea three or four times a day, and now he is as large, as healthy, and eats as much as anybody. His indigestion is gone, and instead of eating cold light bread dipped in warm water, as was his custom a year or two since, he takes "a square meal" regularly three times a day, and is as gay and as lively as a boy. This is but one case out of a hundred that I could mention who have had their digestive organs relieved by the use of the mass. I mention next one or two cases of females, which I look upon as interesting and tending to show the efficacy of the remedy. I

have not selected these cases, but give them because they are more particularly remembered. Before mentioning these, I will say that I have had others which might be more interesting, and certainly have been more difficult and of longer treatment, and which will be mentioned at some future time.

A year ago I was called to see Mrs. L. R.; aged thirty; the mother of one child. Her health had not been good for several years, during which time she had leucorrhœa. She had been subjected to a variety of treatment without much relief. She was confined to her bed almost all the time; was much debilitated and emaciated; face pale; pulse quick and feeble; skin cool; urine scanty, and always severe pains in the lumbar and pelvic regions. The vaginal discharge was copious and offensive. Her general health was seriously involved by this continued drain upon the system. Believing that this condition might be partly due to some inflammation either of the vagina or of the internal cavity of the uterus, or both, I asked that an examination be made. This being granted, I found an enlarged and indurated cervix as among the chief sources of trouble. I at once began the use of injections of warm water and castile soap to cleanse the parts thoroughly. As soon as this was done, I commenced the use of injections of a solution of alum water, which was to be used once or twice a day, and for the constitutional remedy the Iron and Alum Mass in small quantity at first, but gradually increased from day to day. Under this treatment, with a nourishing diet, she gradually and steadily improved. The irritation of the parts even subsided, the muco-purulent discharge ceased, and at the end of the fourth month she had regained her health to such an extent as to resume her duties.

Another case was that of Mrs. R. R.; thirty-five years of age; the mother of two children; the youngest nearly two years of age. She had been suffering since the birth of her last child with distressing symptoms, rendering her quite nervous, and only experiencing relief when perfectly quiet or when under the influence of an opiate. There was a constant desire to pass water, and this effort was made only when lying down, in consequence of a dread of returning pain. Opiates had been

given her in large quantities to relieve pain, and bromide of potassium in huge doses "to relieve nervous excitement." Menstruation irregular, scanty and painful; bowels constipated, and the bladder frequently kept distended, as I have said, in consequence of a dread of pain. Suspecting some uterine trouble, I asked that she be examined, which being granted, I drew off the water with a catheter and injected the vagina with tepid water to cleanse the parts thoroughly. Upon examination I found the uterus quite low, neck but little enlarged and very painful to the touch, and the surrounding parts of the vagina quite sensitive. In the evening she almost always had a headache with slight fever.

I neglected to state when speaking of the general symptoms that there was a loss of appetite, thirst, with restlessness all the time whilst awake. In consequence of this her general health was undermined and the nervous system much shattered. In the examinations made at first I always found an exceedingly irritable uterus; the opiates too had become disagreeable, in consequence of the stomach sympathizing in the disturbance already given to the system. I at once commenced the Iron and Alum Mass treatment; a pill the size of a small pea to be taken three or four times a day before eating, and injections of tepid water, soap and solutions of alum water. Under this treatment my patient has rapidly recovered, becoming regular in her menstrual periods, free from pain, and general health excellent. We are taught that the links which form the chain of causes are the remote or predisposing and the exciting; common consent probably may give other divisions. The remote or predisposing cause brings a part or all of the system rapidly or slowly into a condition by which it takes on diseased action, and the exciting applied to the parts so exposed.

In the case presented the exciting cause was evidently an irritable uterus, the predisposing brought about by neglect or imprudence, by which the general health was deranged. But the tonic effects of the mass, with proper diet and proper hygienic rules, have made her a woman sound in body and an ornament to the society in which she moves.

But this is not only a remedy which is efficacious in indiges-

tion and in some of the diseases peculiar to females, but it is a safe, and, generally speaking, a sure remedy in some affections of the skin, more particularly those dependent upon a strumous diathesis.

I wish here to mention a case of chronic eczema of the leg which has been successfully treated by the use of the Iron and Alum Mass.

It is a fact, that eczema is an affection consisting of a vesicular eruption, and may be found upon the skin on various parts of the body, and that in the severer forms the eruption is accompanied with redness, and, probably, some inflammation. The prognosis being favorable usually, yet in a chronic state the disease is obstinate, continuing for years, and is always a source of much discomfort.

The case to be mentioned here was that of an old man of sixty, who some time ago had received a slight cut upon the anterior portion of the leg, which gave rise to the condition (so he states) in which I found him. In reporting a case of this character, it is well enough to be reminded of the fact, that the circulation of the blood in the lower extremities of the aged is always sluggish and feeble. But to return; in this case there was some predisposing cause, and this was a strumous habit. The treatment pursued at first was local applications of potassa fusa in weak solution, and over this applications of glycerine to give softness. This treatment was faithfully pursued, with the addition of the internal use of Fowler's Solution. But after weeks and months little effect was produced, until I determined to use the Iron and Alum Mass, both internally and as a local application.

I have already stated a belief that there was some predisposing cause which gave rise to this chronic affection. The history of the patient corroborated the belief, as his family 'were scrofulous.' I put him upon the treatment as stated, and by the use of bandages as an adjunct he has gained health, and, of course, strength. The progress of the affection was checked in a short time; the infiltration was soon removed; there was no longer an exudation from and into the diseased part, and finally desquamation entirely ceased. This case, to

me, was an exceedingly interesting one, and the treatment pursued has proven entirely satisfactory, for it entirely changes (if it continues to be efficacious) the treatment of that class of affections which proves most troublesome to the general practitioner.

There is but one other case that I propose mentioning now ; one which is under treatment. This is a patient fifty years of age, with an ulceration and swelling of the right leg, which he states commenced at the ankle. He says his general health is now comparatively good, although years ago he had swellings on various parts of his body, particularly about the glands of the neck. In examining this ulceration I found several sinuses extending in various directions. This, in addition to the sloughing character of the ulceration, led me to infer that it might be due to some syphilitic taint, but the history of the patient precludes all possibility of such a thing. At any rate, I was satisfied that it was a chronic inflammation with an undermining of the integument. There was a watery secretion of a disagreeable odor. This patient was put upon the treatment usually recommended for such cases, but it did no good. I finally determined to try the virtues of the mass, both internally and as a local application, and I find my patient almost well, and, I think, bids fair to be an old and an active man. The peculiarity of the ulceration and its being one of long standing was evidence of difficulty in its treatment. It proved to be so whilst following the old plans recommended in such cases. But by the continued use of the Iron and Alum Mass, both internally and as a local application, the results have been highly gratifying.

With these cases, I have but little more to add now of the efficacy of the remedy here spoken of. But I trust that these have been of some interest, and that the treatment pursued has been so simple, so safe, and so effective, as to induce others of the Profession to try its effect.



## ECLECTIC DEPARTMENT.

“Carpere et colligere.”

ART. I.—*Bacteria—Vibriones—Fermentation, etc., and their Bearings on the Etiology and Phenomena of Disease.* An Address Delivered before the Glasgow Science Lectures Association by Prof. J. TYNDALL, London, England.\*

One of the most remarkable characteristics of the age in which we live, is its desire and tendency to connect itself organically with preceding ages—to ascertain how the state of things that now is came to be what it is. And the more earnestly and profoundly this problem is studied, the more clearly comes into view the vast and varied debt which the world of to-day owes to that fore-world, in which man by skill, valor, and well-directed strength first replenished and subdued the earth. Our pre-historic fathers may have been savages, but they were clever and observant ones. They founded agriculture by the discovery and development of seeds whose origin is now unknown. They tamed and harnessed their animal antagonists, and sent them down to us as ministers, instead of rivals in the fight for life. Later on, when the claims of luxury added themselves to those of necessity, we find the same spirit of invention at work. We have no historic account of the first brewer, but we glean from history that his art was practiced, and its produce relished, more than two thousand years ago. Theophrastus, who was born nearly four hundred years before Christ, described beer as *the wine of barley*. It is extremely difficult to preserve beer in a hot country, still, Egypt was the land in which it was first brewed, the desire of man to quench his thirst with this exhilarating beverage overcoming all the obstacles which a hot climate threw in the way of its manufacture.

Our remote ancestors had also learned by experience that wine maketh glad the heart of man. Noah, we are informed, planted a vineyard, drank of the wine, and experienced the consequences. But, though wine and beer possess so old a history,

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\* This admirable paper is published in full; it is alone worth the cost of this Journal for one year.—E. S. G.

a very few years ago no man knew the secret of their formation. Indeed, it might be said that until the present year no thorough and scientific account was ever given of the agencies which come into play in the manufacture of beer, of the conditions necessary to its health, and of the maladies and vicissitudes to which it is subject. Hitherto the art and practice of the brewer have resembled those of the physician, both being founded on empirical observation. By this is meant the observation of facts apart from the principles which explain them, and which give the mind an intelligent mastery over them. The brewer learnt from long experience the conditions, not the reasons of success. But he had to contend, and he has still to contend, against unexplained perplexities. Over and over again his care has been rendered nugatory; his beer has fallen into acidity or rottenness, and disastrous losses have been sustained, of which he has been unable to assign the cause. It is the hidden enemies against which the physician and the brewer have hitherto contended, that recent researches are dragging into the light of day, thus preparing the way for their final extermination.

Let us glance for a moment at the outward and visible signs of fermentation. A few weeks ago I paid a visit to a private still in a Swiss chalet; and this is what I saw: In the peasant's bed-room was a cask with a very large bung-hole carefully closed. The cask contained cherries which had lain in it for fourteen days. It was not entirely filled with the fruit, an air-space being left above the cherries when they were put in. I had the bung removed, and a small lamp dipped into this space. Its flame was instantly extinguished. The oxygen of the air had entirely disappeared, its place being taken by carbonic acid gas.\* I tasted the cherries; they were very sour, though when put into the cask they were sweet. The cherries and the liquid associated with them were then placed in a copper boiler, to which a copper head was closely fitted. From the head proceeded a copper tube which passed straight through a vessel of

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\* The gas which is exhaled from the lungs after the oxygen of the air has done its duty in purifying the blood, the same also which effervesces from soda water and champagne.

cold water, and issued at the other side. Under the open end of the tube was placed a bottle to receive the spirit distilled. The flame of small wood-splinters being applied to the boiler, after a time vapor rose into the head, passed through the tube, was condensed by the cold of the water, and fell in a liquid fillet into the bottle. On being tasted, it proved to be that fiery and intoxicating spirit known in commerce as Kirsch or Kirschwasser.

The cherries, it should be remembered, were here left to themselves, no ferment of any kind being added to them. In this respect what has been said of the cherry applies also to the grape. At the vintage the fruit of the vine is placed in proper vessels and abandoned to its own action. It ferments, producing carbonic acid; its sweetness disappears, and at the end of a certain time the unintoxicating grape-juice is converted into intoxicating wine. Here, as in the case of the cherries, the fermentation is spontaneous—in what sense spontaneous will appear more clearly by-and-by.

It is needless for me to tell a Glasgow audience that the beer-brewer does not set to work in this way. In the first place, the brewer deals not with the juice of fruits, but with the juice of the barley. The barley having been steeped for a sufficient time in water, it is drained, and subjected to a temperature sufficient to cause the moist grain to germinate; after which it is completely dried upon a kiln. It then receives the name of malt. The malt is crisp to the teeth, and decidedly sweeter to the taste than the original barley. It is ground, mashed up in warm water, then boiled with hops until all the soluble portions have been extracted; the infusion thus produced being called the *wort*. This is drawn off, and cooled as rapidly as possible; then, instead of abandoning the infusion, as the wine-maker does, to its own action, the brewer mixes yeast with his wort, and places it in vessels each with only one aperture open to the air. Soon after the addition of the yeast, a brownish froth, which is really new yeast, issues from the aperture, and falls like a cataract into troughs prepared to receive it. This frothing and foaming of the wort is a proof that the fermentation is active.

Whence comes the yeast which issues so copiously from the fermenting-tub? What is this yeast, and how did the brewer become in the first instance possessed of it? Examine its quantity before and after fermentation. The brewer introduces, say ten cwts. of yeast; he collects forty, or it may be fifty cwts. The yeast has, therefore, augmented from four to five fold during the fermentation. Shall we conclude that this additional yeast has been spontaneously generated by the wort? Are we not rather reminded of that seed which fell into good ground, and brought forth fruit, some thirtyfold, some sixtyfold, some an hundredfold? On examination, this notion of organic growth turns out to be more than a mere surmise. In the year 1680, when the microscope was still in its infancy, Leeuwenhoek turned the instrument on this substance, and found it composed of minute globules suspended in a liquid. Thus knowledge rested until 1835, when Cagniard de la Tour in France, and Schwann in Germany, independently, but animated by a common thought, turned microscopes of improved definition and heightened powers upon yeast, and found it budding and sprouting before their eyes. The augmentation of the yeast alluded to above was thus proved to arise from the growth of a minute plant, now called *Torula* (or *Saccharomyces*) *Cerevisiæ*. Spontaneous generation is therefore out of the question. The brewer deliberately sows the yeast-plant, which grows and multiplies in the wort as its proper soil. This discovery marks an epoch in the history of fermentation.

But where did the brewer find his yeast? The reply to this question is similar to that which must be given if it were asked where the brewer found his barley. He has received the seeds of both of them from preceding generations. Could we connect without solution of continuity the present with the past, we should probably be able to trace back the yeast employed by my friend Sir Fowell Buxton to-day, to that employed by some Egyptian brewer two thousand years ago. But you may urge that there must have been a time when the first yeast-cell was generated. Granted—exactly as there was a time when the first barleycorn was generated. Let not the delusion lay hold of you, that a living thing is easily generated, because it is

small. Both the yeast-plant and the barley-plant lose themselves in the dim twilight of antiquity, and in this our day there is no more proof of the spontaneous generation of the one, than there is of the spontaneous generation of the other.

I stated a moment ago that the fermentation of grape-juice was spontaneous; but I was careful to add, "in what sense spontaneous will appear more clearly by-and-by." Now this is the sense meant. The wine-maker does not, like the brewer and distiller, deliberately introduce either yeast, or any equivalent of yeast, into his vats; he does not consciously sow in them any plant, or the germ of any plant; indeed he has been hitherto in ignorance whether plants or germs of any kind have had anything to do with his operations. Still, when the fermented grape-juice is examined, the living *Torula* concerned in alcoholic fermentation never fails to make its appearance. How is this? If no living germ has been introduced into the wine-vat, whence comes the life so invariably developed there?

You may be disposed to reply with Turpin and others, that in virtue of its own inherent powers, the grape-juice, when brought into contact with the vivifying atmospheric oxygen, runs spontaneously and of its own accord into these low forms of life. I have not the slightest objection to this explanation provided proper evidence can be adduced in support of it. But the evidence adduced in its favor, as far as I am acquainted with it, snaps asunder under the least strain of scientific criticism. It is, as far as I can see, the evidence of men, who, however keen and clever as *observers*, are not rightly trained *experimenters*. These alone are aware of the precautions necessary in investigations of this delicate kind. In reference, then, to the life of the wine-vat, what is the decision of experiment when carried out by competent men? Let a quantity of the clear, filtered "must" of the grape be so boiled as to destroy such germs as it may have contracted from the air or otherwise. In contact with germless air the uncontaminated "must" never ferments. All the materials for spontaneous generation are there, but so long as there is no seed sown there is no life developed, and no sign of that fermentation which is the concomitant of life. Nor need you resort to a boiled liquid. The grape is sealed by its

own skin against contamination from without. By an ingenious device Pasteur has extracted from the interior of the grape its pure juice, and proved that in contact with pure air it never acquires the power to ferment itself, nor to produce fermentation in other liquids.\* It is not, therefore, in the interior of the grape that the origin of the life observed in the vat is to be sought.

What, then, is its true origin? This is Pasteur's answer, which his well-proved accuracy renders worthy of all confidence. At the time of the vintage microscopic particles are observed adherent, both to the outer surface of the grape and of the twigs which support the grape. Brush these particles into a capsule of pure water. It is rendered turbid by the dust. Examined by a microscope some of these minute particles are seen to present the appearance of organized cells. Instead of receiving them in water, let them be brushed into the pure inert juice of the grape. Forty-eight hours after this is done, our familiar *Torula* is observed budding and sprouting, the growth of the plant being accompanied by all the other signs of active fermentation. What is the inference to be drawn from this experiment? Obviously that the particles adherent to the external surface of the grape include the germs of that life which, after they have been sown in the juice, appears in such profusion. Wine is sometimes objected to on the ground that fermentation is "artificial;" but we notice here the responsibility of nature. The ferment of the grape clings like a parasite to the surface of the grape, and the art of the wine-maker from time immemorial has consisted in bringing—and it may be added, ignorantly bringing—two things thus closely associated by nature into actual contact with each other. For thousands of years what has been done consciously by the brewer, has been done unconsciously by the wine-grower. The one has sown his leaven just as much as the other.

Nor is it necessary to impregnate the beer-wort with yeast to provoke fermentation. Abandoned to the contact of our

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\* The liquids of the healthy animal body are also sealed from external contamination. Pure blood, for example, drawn with due precaution from the veins, will never ferment or putrefy in contact with pure air.

common air, it sooner or later ferments; but the chances are that the produce of that fermentation, instead of being agreeable, would be disgusting to the taste. By a rare accident we might get the true alcoholic fermentation, but the odds against obtaining it would be enormous. Pure air acting upon a lifeless liquid will never provoke fermentation; but our ordinary air is the vehicle of numberless germs, which act as ferments when they fall into appropriate infusions. Some of them produce acidity, some putrefaction. The germs of our yeast-plant are also in the air; but so sparingly distributed that an infusion like beer-wort, exposed to the air, is almost sure to be taken possession of by foreign organisms. In fact, the maladies of beer are wholly due to the admixture of these objectionable ferments, whose forms and modes of nutrition differ materially from those of the true leaven.

Working in an atmosphere charged with the germs of these organisms, you can understand how easy it is to fall into error in studying the action of any one of them. Indeed, it is only the most accomplished experimenter, who, moreover, avails himself of every means of checking his conclusions, that can walk without tripping through this land of pitfalls. Such a man is the French chemist Pasteur. He has taught us how to separate the commingled ferments of our air, and to study their pure individual action. Guided by him, let us fix our attention more particularly upon the growth and action of the true yeast-plant under different conditions. Let it be sown in a fermentable liquid, which is supplied with plenty of pure air. The plant will flourish in the aerated infusion, and produce large quantities of carbonic acid gas—a compound, as you know, of carbon and oxygen. The oxygen thus consumed by the plant is the free oxygen of the air, which we suppose to be abundantly supplied to the liquid. The action is so far similar to the respiration of animals, which inspire oxygen and expire carbonic acid. If we examine the liquid even when the vigor of the plant has reached its maximum, we hardly find in it a trace of alcohol. The yeast has grown and flourished, but it has almost ceased to act as a ferment. And could every individual yeast-cell seize, without any impediment, free oxygen from the surrounding

liquid, it is certain that it would cease to act as a ferment altogether.

What, then, are the conditions under which the yeast-plant must be placed so that it may display its characteristic quality? Reflection on the facts already referred to suggests a reply, and rigid experiment confirms the suggestion. Consider the Alpine cherries in their closed vessel. Consider the beer in its barrel, with a single small aperture open to the air, through which it is observed not to imbibe oxygen, but to pour forth carbonic acid. Whence come the volumes of oxygen necessary to the production of this latter gas? The small quantity of atmospheric air dissolved in the wort and overlying it would be totally incompetent to supply the necessary oxygen. In no other way can the yeast-plant obtain the gas necessary for its respiration than by wrenching it from surrounding substances, in which the oxygen exists, not free, but in a state of combination. It decomposes the sugar of the solution in which it grows, produces heat, breathes forth carbonic acid gas, and one of the liquid products of the decomposition is our familiar alcohol. The act of fermentation, then, is a result of the effort of the little plant to maintain its respiration by means of combined oxygen, when its supply of free oxygen is cut off. As defined by Pasteur, fermentation is *life without air*.

But here the knowledge of that thorough investigator comes to our aid to warn us against errors which have been committed over and over again. It is not all yeast-cells that can thus live without air and provoke fermentation. They must be young cells which have caught their vegetative vigor from contact with free oxygen. But once possessed of this vigor the yeast may be transplanted into a saccharine infusion absolutely purged of air, where it will continue to live at the expense of the oxygen, carbon, and other constituents of the infusion. Under these new conditions its life, *as a plant*, will be by no means so vigorous as when it had a supply of free oxygen, but its action *as a ferment* will be indefinitely greater.

Does the yeast-plant stand alone in its power of provoking alcoholic fermentation? It would be singular if amid the multitude of low vegetable forms no other could be found capable



of acting in a similar way. And here again we have occasion to marvel at that sagacity of observation among the ancients to which we owe so vast a debt. Not only did they discover the alcoholic ferment of yeast, but they had to exercise a wise selection in picking it out from others, and giving it special prominence. Place an old boot in a moist place, or expose common paste or a pot of jam to the air; it soon becomes coated with a blue-green mould, which is nothing else than the fructification of a little plant called *Penicillium glaucum*. Do not imagine that the mould has sprung spontaneously from boot, or paste, or jam; its germs, which are abundant in the air, have been sown, and have germinated, in as legal and legitimate a way as thistle-seeds wafted by the wind to a proper soil. Let the minute spores of *Penicillium* be sown in a fermentable liquid, which has been previously so boiled as to kill all other spores or seeds which it may contain; let pure air have free access to the mixture; the *Penicillium* will grow rapidly, striking long filaments into the liquid, and fructifying at its surface. Test the infusion at various stages of the plant's growth, you will never find in it a trace of alcohol. But forcibly submerge the little plant, push it down deep into the liquid, where the quantity of free oxygen that can reach it is insufficient for its needs, it immediately begins to act as a ferment, supplying itself with oxygen by the decomposition of the sugar, and producing alcohol as one of the results of the decomposition. Many other low microscopic plants act in a similar manner. In aerated liquids they flourish without any production of alcohol, but cut off from free oxygen they act as ferments, producing alcohol exactly as the real alcoholic leaven produces it, only less copiously. For the right apprehension of all these facts we are indebted to Pasteur.

In the cases hitherto considered, the fermentation is proved to be the invariable correlative of *life*, being produced by organisms foreign to the fermentable substance. But the substance itself may also have within it, to some extent, the motive power of fermentation. The yeast-plant, as we have learned, is an assemblage of living cells; but so at the bottom, as shown by Schleiden and Schwann, are all living organisms. Cherries,

apples, peaches, pears, plums, and grapes, for example, are composed of cells, each of which is a living unit. And here I have to direct your attention to a point of extreme interest. In 1821 the celebrated French chemist, Bérard, established the important fact, that all ripening fruit exposed to free atmosphere absorbed the oxygen of the atmosphere and liberated an approximately equal volume of carbonic acid. He also found that when ripe fruits were placed in a confined atmosphere, the oxygen of the atmosphere was first absorbed, and an equal volume of carbonic acid given out. But the process did not end here. After the oxygen had vanished, carbonic acid in considerable quantities continued to be exhaled by the fruits, which at the same time lost a portion of their sugar, becoming more acid to the taste, though the absolute quantity of acid was not augmented. This was an observation of capital importance, and Bérard had the sagacity to remark that the process might be regarded as a kind of fermentation.

Thus the living cells of fruits can absorb oxygen and breathe out carbonic acid exactly like the living cells of the leaven of beer. Supposing the access of oxygen suddenly cut off, will the living fruit-cells as suddenly die, or will they continue to live as yeast lives, by extracting oxygen from the saccharine juices around them? This is a question of extreme theoretic significance. It was first answered affirmatively by the able and conclusive experiments of Lechartier and Bellamy, and the answer was subsequently confirmed and explained by the experiments and the reasoning of Pasteur. Bérard only showed the absorption of oxygen and the production of carbonic acid; Lechartier and Bellamy proved the production of alcohol, thus completing the evidence that it was a case of real fermentation, though the common alcoholic ferment was absent. So full was Pasteur of the idea that the cells of a fruit would continue to live at the expense of the sugar of the fruit, that once in his laboratory, while conversing on these subjects with M. Dumas, he exclaimed, "I will wager that if a grape be plunged into an atmosphere of carbonic acid, it will produce alcohol and carbonic acid by the continued life of its own cells—that they will act for a time like the cells of the true alcoholic leaven." He made the

experiment, and found the result to be what he had foreseen. He then extended the inquiry. Placing under a bell-jar twenty-four plums, he filled the jar with carbonic acid gas; beside it he placed twenty-four similar plums uncovered. At the end of eight days he removed the plums from the jar, and compared them with the others. The difference was extraordinary. The uncovered fruits had become soft, watery, and very sweet; the others were firm and hard, their fleshy portions being not at all watery. They had, moreover, lost a considerable quantity of their sugar. They were afterwards bruised, and the juice was distilled. It yielded six and a half grammes of alcohol, or one per cent. of the total weight of the plums. Neither in these plums nor in the grapes first experimented on by Pasteur could any trace of the ordinary alcoholic leaven be found. As previously proved by Lechartier and Bellamy, the fermentation was the work of the living cells of the fruit itself, after air had been denied to them. When, moreover, the cells were destroyed by bruising, no fermentation ensued. The fermentation was the correlative of a vital act, and it ceased when life was extinguished.

Lüdersdorf was the first to show by this method that yeast acted, not, as Liebig had assumed, in virtue of its *organic*, but in virtue of its *organized* character. He destroyed the cells of yeast by rubbing them on a ground glass plate, and found that with the destruction of the organism, though its chemical constituents remained, the power to act as a ferment totally disappeared.

One word more in reference to Liebig may find a place here. To the philosophic chemist thoughtfully pondering these phenomena, familiar with the conception of molecular motion, and the changes produced by the interactions of purely chemical forces, nothing could be more natural than to see in the process of fermentation a simple illustration of molecular instability, the ferment propagating to surrounding molecular groups the overthrow of its own tottering combinations. Broadly considered, indeed, there is a certain amount of truth in this theory; but Liebig, who propounded it, missed the very kernel of the phenomena when he overlooked or contemned the part played

in fermentation by microscopic life. He looked at the matter too little with the eye of the body, and too much with the spiritual eye. He practically neglected the microscope, and was unmoved by the knowledge which its revelations would have poured in upon his mind. His hypothesis, as I have said, was natural, nay, it was a striking illustration of Liebig's power to penetrate and unveil molecular actions; but it was an error, and as such has proved an *ignis fatuus* instead of a *pharos* to some of his followers.

I have said that our air is full of the germs of ferments differing from the alcoholic leaven, and sometimes seriously interfering with the latter. They are the weeds of this microscopic garden which often overshadow and choke the flowers. Let us take an illustrative case. Expose boiled milk to the air. It will cool, and then turn sour, separating like blood into clot and serum. Place a drop of this sour milk under a powerful microscope and watch it closely. You see the minute butter globules animated by that curious quivering motion called the Brownian motion.\* But let not this attract your attention too much, for it is another motion that we have now to seek. Here and there you observe a greater disturbance than ordinary among the globules; keep your eye upon the place of tumult, and you will probably see emerging from it a long eel-like organism, tossing the globules aside and wriggling more or less rapidly across the field of the microscope. Familiar with one sample of this organism, which from its motions receives the name of vibrio, you soon detect numbers of them. It is these organisms, and ether analogous though apparently motionless ones, which by decomposing the milk render it sour and putrid. They are the lactic and putrid ferments, as the yeast-plant is the alcoholic ferment of sugar. Keep them and their germs out of your milk and it will continue sweet. But milk may become putrid without becoming sour. Examine such putrid milk microscopically, and you find it swarming with shorter organisms, sometimes associated with the vibrios, sometimes alone, and often manifesting a wonderful alacrity of motion. Keep these organisms and their germs out of your milk and it

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\* Which I am inclined to regard as an effect of surface tension.

will never putrefy. Expose a mutton chop to the air and keep it moist; in summer weather it soon stinks. Place a drop of the juice of the fetid chop under a powerful microscope; it is seen swarming with organisms resembling those in the putrid milk. These organisms, which receive the common name of bacteria,\* are the agents of all putrefaction. Keep them and their germs from your meat and it will remain forever sweet. Thus we begin to see that within the world of life to which we ourselves belong, there is another living world requiring the microscope for its discernment, but which nevertheless has the most important bearing on the welfare of the higher life-world.

And now let us reason together as regards the origin of these bacteria. A granular powder is placed in your hands, and you are asked to state what it is. You examine it, and have, or have not, reason to suspect that seeds of some kind are mixed up in it. But you prepare a bed in your garden, sow in it the powder, and soon after find a mixed crop of docks and thistles sprouting from your bed. Until this powder was sown neither docks nor thistles ever made their appearance in your garden. You repeat the experiment once, twice, ten times, fifty times. From fifty different beds after the sowing of the powder you obtain the same crop. What will be your response to the question proposed to you? "I am not in a condition," you would say, "to affirm that every grain of the powder is a dock seed or a thistle seed; but I am in a condition to affirm that both dock and thistle seeds form, at all events, part of the powder." Supposing a succession of such powders to be placed in your hands with grains becoming gradually smaller, until they dwindle to the size of impalpable dust particles; assuming that you treat them all in the same way, and that from every one of them in a few days you obtain a definite crop—it may be clover, it may be mustard, it may be mignonette, it may be a plant more minute than any of these; the smallness of the particles, or of the plants that spring from them, does not affect the validity of the conclusion. Without a shadow of misgiving you would conclude that the powder must have contained the seeds or

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\* Doubtless organisms exhibiting grave specific differences are grouped together under this common name.

germs of the life observed. There is not in the range of physical science an experiment more conclusive nor an inference safer than this one.

Supposing the powder to be light enough to float in the air, and that you are enabled to see it there just as plainly as you saw the heavier powder in the palm of your hand. If the dust sown by the air instead of by the hand produces a definite living crop, with the same logical rigor you would conclude that the germs of this crop must be mixed with the dust. To take an illustration: the spores of the little plant *Penicillium glaucum*, to which I have already referred, are light enough to float in the air. A cut apple, a pear, a tomato, a slice of vegetable marrow, or, as already mentioned, an old moist boot, a dish of paste, or a pot of jam, constitute a proper soil for the *Penicillium*. Now, if it could be proved that the dust of the air when sown in this soil produces this plant, while, wanting the dust, neither the air nor the soil, nor both together can produce it, it would be obviously just as certain in this case that the floating dust contains the germs of *Penicillium* as that the powders sown in your garden contained the germs of the plants which sprung from them.

But how is the floating dust to be rendered visible? In this way. Build a little chamber and provide it with a door, window, and window shutters. Let an aperture be made in one of the shutters through which a sunbeam can pass. Close the door and windows so that no light shall enter save through the hole in the shutter. The track of the sunbeam is at first perfectly plain and vivid in the air of the room. If all disturbance of the air of the chamber be avoided, the luminous track will become fainter and fainter, until at last it disappears absolutely, and no trace of the beam is to be seen. What rendered the beam visible at first? The floating dust of the air, which thus illuminated and observed, is as palpable to sense as any dust or powder placed on the palm of the hand. In the still air the dust gradually sinks to the floor or sticks to the walls and ceiling, until finally, by this self-cleansing process, the air is entirely freed from mechanically suspended matter.

Thus far, I think, we have made our footing sure. Let us

proceed. Chop up a beefsteak and allow it to remain for two or three hours just covered with warm water; you thus extract the juice of the beef in a concentrated form. By properly boiling the liquid and filtering it, you can obtain from it a perfectly transparent beef tea. Expose a number of vessels containing this tea to the moteless air of your chamber, and expose a number of similar vessels containing precisely the same liquid to the dust-laden air. In three days every one of the latter stinks, and examined with the microscope every one of them is found swarming with the bacteria of putrefaction. After three months, or three years, the beef tea within the chamber is found in every case as sweet and clear and as free from bacteria as it was at the moment when it was first put in. There is absolutely no difference between the air within and that without save that the one is dustless and the other dust-laden. Clinch the experiment thus: open the door of your chamber and allow the dust to enter it. In three days afterwards you have every vessel within the chamber swarming with bacteria, and in a state of active putrefaction. Here also the inference is quite as certain as in the case of the powder sown in your garden. Multiply your proofs by building fifty chambers instead of one, and by employing every imaginable infusion of wild animals and tame; of flesh, fish, fowl, and viscera; of vegetables of the most various kinds. If in all these cases you find the dust infallibly producing its crop of bacteria, while neither the dustless air nor the nutritive infusion, nor both together, are ever able to produce this crop, your conclusion is simply irresistible that the dust of the air contains the germs of the crop which has appeared in your infusions. I repeat, there is no inference of experimental science more certain than this one. In the presence of such facts, to use the words of a paper lately published in the "Philosophical Transactions," it would be simply monstrous to affirm that these swarming crops of bacteria are spontaneously generated.

Is there then no experimental proof of spontaneous generation? I answer without hesitation, *none!* But to doubt the experimental proof of a fact and to deny its possibility are two different things, though some writers confuse matters by making

them synonymous. In fact, this doctrine of spontaneous generation, in one form or another, falls in with the theoretic beliefs of some of the foremost workers of this age; but it is exactly these men who have the penetration to see and the honesty to expose the weakness of the evidence adduced in its support.

And here observe how these discoveries tally with the common practices of life. Heat kills the bacteria, cold numbs them. When my housekeeper has pheasants in charge which she wishes to keep sweet, but which threaten to give way, she partially cooks the birds, kills the infant bacteria, and thus postpones the evil day. By boiling her milk she also extends its period of sweetness. Some weeks ago in the Alps I made a few experiments on the influence of cold upon ants. Though the sun was strong, patches of snow still maintained themselves on the mountain slopes. The ants were found in the warm grass and on the warm rocks adjacent. Transferred to the snow the rapidity of their paralysis was surprising. In a few seconds a vigorous ant, after a few languid struggles, would wholly lose its power of locomotion and lie practically dead upon the snow. Transferred to the warm rock, it would revive, to be again smitten with death-like numbness when transferred to the snow. What is true of the ant is specially true of our bacteria. Their active life is suspended by cold, and with it their power of producing or continuing putrefaction. This is the whole philosophy of the preservation of meat by cold. The fishmonger, for example, when he surrounds his very assailable wares by lumps of ice, stays the process of putrefaction by reducing to numbness and inaction the organisms which produce it, and in the absence of which his fish would remain sweet and sound. It is the astonishing activity into which these bacteria are pushed by warmth that renders a single summer's day sometimes so disastrous to the great butchers of London and Glasgow. The bodies of guides lost in the crevasses of Alpine glaciers have come to the surface forty years after their interment, without the flesh showing any sign of putrefaction. But the most astonishing case of this kind is that of the hairy elephant of Siberia which was found incased in ice.



It had been buried for ages, but when laid bare its flesh was sweet, and for some time afforded copious nutriment to the wild beasts which fed upon it.

Beer is assailable by all the organisms here referred to, some of which produce acetic, some lactic, and some butyric acid, while yeast is open to attack from the bacteria of putrefaction. In relation to the particular beverage the brewer wishes to produce, these foreign ferments have been properly called *ferments of disease*. The cells of the true leaven are globules, usually somewhat elongated. The other organisms are more or less rod-like or eel-like in shape, some of them being beaded so as to resemble necklaces. Each of these organisms produces a fermentation and flavor peculiar to itself. Keep them out of your beer and it remains forever unaltered. Never without them will your beer contract disease. But their germs are in the air, in the vessels employed in the brewery; even in the yeast used to impregnate the wort. Consciously or unconsciously, the art of the brewer is directed against them. His aim is to paralyze if he can not annihilate them.

For beer, moreover, the question of temperature is one of supreme importance; indeed, the recognized influence of temperature is causing on the continent of Europe a complete revolution in the manufacture of beer. When I was a student in Berlin, in 1851, there were certain places specially devoted to the sale of Bavarian beer, which was then making its way into public favor. This beer is prepared by what is called the process of low fermentation; the name being given partly because the yeast of the beer, instead of rising to the top and issuing through the bunghole, falls to the bottom of the cask; but partly also because it is produced at a low temperature. The other and older process, called high fermentation, is far more handy, expeditious, and cheap. In high fermentation eight days suffice for the production of the beer; in low fermentation, ten, fifteen, even twenty days are found necessary. Vast quantities of ice, moreover, are consumed in the process of low fermentation. In the single brewery of Dreher, of Vienna, a hundred million pounds of ice are consumed annually in cooling the wort and beer. Notwithstanding these obvious and weighty

drawbacks, the low fermentation is rapidly displacing the high upon the Continent. Here are some statistics which show the number of breweries of both kinds existing in Bohemia in 1860, 1865, and 1870:

	1860.	1865.	1870.
High fermentation.....	281	81	18
Low fermentation.....	135	459	831

Thus in ten years the number of high fermentation breweries fell from two hundred and eighty-one to eighteen, while the number of low fermentation breweries rose from one hundred and thirty-five to eight hundred and thirty-one. The sole reason for this vast change—a change which involves a greater expenditure of time, labor, and money—is the additional command which it gives the brewer over the fortuitous ferments of disease. These ferments, which, it is to be remembered, are living organisms, have their activity suspended by a temperature below  $10^{\circ}$  C., and as long as they are reduced to torpor the beer remains untainted either by acidity or putrefaction. The beer of low fermentation is brewed in winter, and kept in cool cellars; the brewer being thus enabled to dispose of it at his leisure instead of forcing its consumption to avoid the loss involved in its alteration if kept too long. Hops, it may be remarked, act to some extent as an antiseptic to beer. The essential oil of the hop is bactericidal; hence the strong impregnation with hop juice of all beer intended for exportation.

These low organisms, which one might be disposed to regard as the beginnings of life, were we not warned that the microscope, precious and perfect as it is, has no power to show us the real beginnings of life, are by no means purely useless or purely mischievous in the economy of nature. They are only noxious when out of their proper place. They exercise a useful and valuable function as the burners and consumers of dead matter, animal and vegetable, reducing such matter, with a rapidity otherwise unattainable, to innocent carbonic acid and water. Furthermore, they are not all alike, and it is only restricted classes of them that are really dangerous to man. One difference in their habits is worthy of special reference here. Air, or rather the oxygen of the air, which is absolutely necessary to the support of the bacteria of putrefaction, is absolutely

deadly to the vibrios which provoke the butyric acid fermentation. This is most simply illustrated by the following beautiful observation of Pasteur: You know the way of looking at these small organisms through the microscope. A drop of the liquid containing them is placed upon glass, and on the drop is placed a circle of exceedingly thin glass; for, to magnify them sufficiently, it is necessary that the microscope should come very close to the organisms. Round the edge of the circular plate of glass the liquid is in contact with the air, and incessantly absorbs it, including the oxygen. Here, if the drop be charged with bacteria, we have a zone of very lively ones. But through this living zone, greedy of oxygen and appropriating it, the vivifying gas can not penetrate to the centre of the film. In the middle, therefore, the bacteria die, while their peripheral colleagues continue active. If a bubble of air chances to be enclosed in the film, round it the bacteria will pirouette and wobble until its oxygen has been absorbed, after which all their motions cease. Precisely the reverse of all this occurs with the vibrios of butyric acid. In their case it is the peripheral organisms that are first killed, the central ones remaining vigorous while ringed by a zone of dead. Pasteur, moreover, filled two vessels with a liquid containing these vibrios; through one vessel he led air, and killed its vibrios in half an hour; through the other he led carbonic acid, and after three hours found the vibrios fully active. It was while observing these differences of deportment fifteen years ago that the thought of life without air, and its bearing upon the theory of fermentation, flashed upon the mind of this admirable investigator.

And here I am tempted to inquire how it is that during the last five or six years so many of the cultivated English and American public, including members of the Medical Profession and contributors to some of our most intellectual journals, could be so turned aside as they have been from the pure well-spring of scientific truth to be found in the writings of Pasteur? The reason I take to be, that while against unsound logic a healthy mind can always defend itself, against unsound experiment, without discipline, it is defenceless. To judge of the soundness of scientific data, and to reason from data assumed to be sound,

are two totally different things. The one deals with the raw material of fact, the other with the logical textures woven from that material. Now the logical loom may go accurately through all its motions, while the woven fibres may be all rotten. It is this inability, through lack of education in experiment, to judge of the soundness of experimental work, which lies at the root of the defection from Pasteur.

I will cite an example of this mistake of judgment: Between the large-type articles and the reviews of the "Saturday Review" essays on various subjects are interpolated. In the calm of holiday evenings, while reading these brief essays, I have been many a time impressed, not only with their sparkling cleverness, but with their deep-searching wisdom and their wealth of spiritual experience. In this central region of the review the question of spontaneous generation has been taken up and discussed. The writer is not a whit behind his colleagues in literary brilliancy and logical force. But having no touchstone in his own experience to enable him to distinguish a good experiment from a bad one, he has, on a point of the gravest practical import, committed the influence of the powerful journal in which he writes to the support of error. It is only, I would repeat, by practice among facts that the intellect is prepared to judge of facts, and no mere logical acuteness or literary skill can atone for the want of this necessary education.

We now approach an aspect of this question which concerns us still more closely, and which will be best illustrated by an actual fact. A few years ago I was bathing in an Alpine stream, and returning to my clothes from the cascade which had been my shower-bath, I slipped upon a block of granite, the sharp crystals of which stamped themselves into my naked shin. The wound was an awkward one, but being in vigorous health at the time I hoped for a speedy recovery. Dipping a clean pocket-handkerchief into the stream, I wrapped it round the wound, limped home, and remained for four or five days quietly in bed. There was no pain, and at the end of this time I thought myself quite fit to quit my room. The wound, when uncovered, was found perfectly clean, uninflamed, and entirely free from matter. Placing over it a bit of goldbeater's-skin, I walked

about all day. Towards evening itching and heat were felt; a large accumulation of matter followed, and I was forced to go to bed again. The water-bandage was restored, but it was powerless to check the action now set up; arnica was applied, but it made matters worse. The inflammation increased alarmingly, until finally I was ignobly carried on men's shoulders down the mountain and transported to Geneva, where, thanks to the kindness of friends, I was immediately placed in the best medical hands. On the morning after my arrival in Geneva, Dr. Gautier discovered an abscess in my instep, at a distance of five inches from the wound. The two were connected by a channel, or *sinus*, as it is technically called, through which he was able to empty the abscess, without the application of the lance.

By what agency was that channel formed—what was it that thus tore asunder the sound tissue of my instep, and kept me for six weeks a prisoner in bed? In the very room where the water-dressing had been removed from my wound and the gold-beater's-skin applied to it, I opened this year a number of tubes, containing perfectly clear and sweet infusions of fish, flesh, and vegetable. These hermetically sealed infusions had been exposed for weeks, both to the sun of the Alps and to the warmth of a kitchen, without showing the slightest turbidity, or sign of life. But two days after they were opened the greater number of them swarmed with the bacteria of putrefaction, the germs of which had been contracted from the dust-laden air of the room. And had the matter from my abscess been examined, my memory of its appearance leads me to infer that it would have been found equally swarming with these bacteria—that it was their germs which got into my incautiously opened wound, and that they were the subtle workers that burrowed down my shin, dug the abscess in my instep, and produced effects which might well have proved fatal to me.

We here come face to face with the labors of a man who has established for himself an imperishable reputation in relation to this subject, who combines the penetration of the true theorist with the skill and conscientiousness of the true experimenter, and whose practice is one continued demonstration of the theory

that the putrefaction of wounds is to be averted by the destruction of the germs of bacteria. Not only from his own reports of his cases, but from the reports of eminent men who have visited his hospital, and from the opinions expressed to me by Continental surgeons, do I gather that one of the greatest steps ever made in the art of surgery was the introduction of the antiseptic system of treatment, practiced first in Glasgow and now in Edinburgh, by Professor Lister.

The interest of this subject does not slacken as we proceed. We began with the cherry-cask and beer-vat; we end with the body of man. There are persons born with the power of interpreting natural facts, as there are others smitten with everlasting incompetence in regard to such interpretation. To the former class in an eminent degree belonged the celebrated philosopher Robert Boyle, whose words in relation to this subject have in them the forecast of prophecy. "And let me add," writes Boyle in his "Essay on the Pathological Part of Physik," "that he that thoroughly understands the nature of ferments and fermentations shall probably be much better able than he that ignores them, to give a fair account of divers phenomena of several diseases (as well fevers as others) which will perhaps be never properly understood without an insight into the doctrine of fermentations."

Two hundred years have passed since these pregnant words were written, and it is only in this our day that men are beginning to fully realize their truth. In the domain of surgery the justice of Boyle's surmise has been most strictly demonstrated. Demonstration is indeed the only word which fitly characterizes the evidence brought forward by Professor Lister. You will grasp in a moment his leading idea. Take the extracted juice of beef or mutton, so prepared as to be perfectly transparent, and entirely free from the living germs of bacteria. Into the clear liquid let fall the tiniest drop of an infusion charged with the bacteria of putrefaction. Twenty-four hours subsequently the clear extract will be found muddy throughout, the turbidity being due to swarms of bacteria generated by the drop with which the infusion was inoculated. At the same time the infusion will have passed from a state of sweetness to a state of

putridity. Let a drop similar to that which has produced this effect fall into an open wound; the juices of the living body nourish the bacteria as the beef or mutton juice nourished them, and you have putrefaction produced within the system. The air, as I have said, is laden with floating matter which, when it falls upon the wound, acts substantially like the drop. Professor Lister's aim is to destroy the life of that floating matter—to kill such germs as it may contain. Had he, for example, dressed my wound, instead of opening it incautiously in the midst of air laden with germs of bacteria, and instead of applying to it goldbeater's skin, which probably carried these germs upon its surface, he would have showered upon the wound, during the time of dressing, the spray of some liquid capable of killing the germs. The liquid usually employed for this purpose is dilute carbolic acid, which, in his skilled hands, has become a specific against putrefaction and all its deadly consequences.

We now pass the bounds of surgery proper, and enter the domain of epidemic disease, including those fevers so sagaciously referred to by Boyle. The most striking analogy between a *contagium* and a ferment is to be found in the power of indefinite self-multiplication possessed and exercised by both. You know the exquisitely truthful figures regarding leaven employed in the New Testament. A particle hid in three measures of meal leavens it all. A little leaven leaveneth the whole lump. In a similar manner a particle of *contagium* spreads through the human body, and may be so multiplied as to strike down whole populations. Consider the effect produced upon the system by a microscopic quantity of the virus of small-pox. That virus is to all means and purposes a seed. It is sown as yeast is sown, it grows and multiplies as yeast grows and multiplies, and it always reproduces itself. To Pasteur we are indebted for a series of masterly researches, wherein he exposes the looseness and general baselessness of prevalent notions regarding the transmutation of one ferment into another. He guards himself against saying it is impossible. The true investigator is sparing in the use of this word, though the use of it is unsparingly ascribed to him; but, as a matter of fact, Pasteur has

never been able to effect the alleged transmutation, while he has been always able to point out the open doorways through which the affirmers of such transmutations had allowed error to march in upon them.\*

The great source of error here has been already alluded to in this discourse. The observers worked in an atmosphere charged with the germs of different organisms; the mere accident of first possession rendering now one organism, now another triumphant. In different stages, moreover, of its fermentative or putrefactive changes, the same infusion may so alter as to be successively taken possession of by different organisms. Such cases have been adduced to show that the earlier organisms must have been transformed into the later ones, whereas they are simply cases in which different germs, because of changes in the infusion, render themselves valid at different times.

By teaching us how to cultivate each ferment in its purity—in other words, by teaching us how to rear the individual organism apart from all others—Pasteur has enabled us to avoid all these errors. And where this isolation of a particular organism has been duly effected it grows and multiplies indefinitely, but no change of it into another organism is ever observed. In Pasteur's researches the bacterium remained a bacterium, the vibrio a vibrio, the penicillium a penicillium, and the torula a torula. Sow any of these in a state of purity in an appropriate liquid; you get it, and it alone, in the subsequent crop. In like manner, sow small-pox in the human body, your crop is small-pox. Sow there scarlatina, and your crop is scarlatina. Sow typhoid virus, your crop is typhoid—cholera, your crop is cholera. The disease bears as constant a relation to its contagium as the microscopic organisms just enumerated do to their germs, or indeed as a thistle does to its seed. No wonder, then, with analogies so obvious and so striking, that the conviction is spreading and growing daily in strength that

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\* Those who wish for an illustration of the care necessary in these researches, and of the carelessness with which they have in some cases been conducted, will do well to consult the Rev. W. H. Dallinger's excellent "Notes on Heterogenesis," in the October number of the "Popular Science Review."



reproductive parasitic life is at the root of epidemic disease; that living ferments finding a lodgment in the body, increase there and multiply, directly ruining the tissue on which they subsist, or destroying life indirectly by the generation of poisonous compounds within the body. The conclusion, which comes to us with a presumption almost amounting to demonstration, is clinched by the fact that virulently infective diseases have been discovered with which living organisms are as closely and as indissolubly associated as the growth of *Torula* is with the fermentation of beer.

And here, if you will permit me, I would utter a word of warning to well-meaning people. We have now reached a phase of this question when it is of the very last importance that light should once for all be thrown upon the manner in which contagious and infectious diseases take root and spread. To this end the action of various ferments upon the organs and tissues of the living body must be studied; the habitat of each special organism concerned in the production of each specific disease must be determined, and the mode by which its germs are spread abroad as sources of further infection. It is only by such rigidly accurate inquiries that we can obtain final and complete mastery over these destroyers. Hence, while abhorring cruelty of all kinds, while shrinking sympathetically from all animal suffering—suffering which my own pursuits never call upon me to inflict—an unbiased survey of the field of research now opening out before the physiologist causes me to conclude that no greater calamity could befall the human race than the stoppage of experimental inquiry in this direction. A lady whose philanthropy has rendered her illustrious said to me some time ago that science was becoming immoral; that the researches of the past, unlike those of the present, were carried on without cruelty. I replied to her that the science of Kepler and Newton, to which she referred, dealt with the laws and phenomena of inorganic nature; but that one great advance made by modern science was in the direction of biology, or the science of life; and that in this new direction scientific inquiry, though at the outset pursued at the cost of some temporary suffering, would in the end prove a thousand times more

beneficent than it had ever hitherto been. I said this because I saw that the very researches which the lady deprecated were leading us to such a knowledge of epidemic diseases as will enable us finally to sweep these scourges of the human race from the face of this fair earth.

This is a point of such special importance that I should like to bring it home to your intelligence by a single trustworthy illustration. In 1850 two distinguished French observers, MM. Davainne and Rayer, noticed in the blood of animals which had died of the virulent disease called splenic fever small microscopic organisms resembling transparent rods, but neither of them at that time attached any significance to the observation. In 1861 Pasteur published a memoir on the fermentation of butyric acid, wherein he described the organism which provoked it; and after reading this memoir it occurred to Davainne that splenic fever might be a case of fermentation set up within the animal body by the organisms which had been observed by him and Rayer. This idea has been placed beyond all doubt by subsequent research.

Some years in advance of the labors undertaken by Davainne, observations of the highest importance had been made on splenic fever by Pollender and Brauell. Two years ago, Dr. Burdon Sanderson gave us a very clear account of what was known up to that time of this disorder. With regard to the permanence of the contagium, it had been proved to hang for years about localities where it had once prevailed; and this seemed to show that the rod-like organisms could not constitute the contagium, because their infective power was found to vanish in a few weeks. But other facts established an intimate connection between the organisms and the disease, so that a review of all the facts caused Dr. Sanderson to conclude that the contagium existed in two distinct forms; the one "fugitive" and visible as transparent rods; the other permanent but "latent," and not yet brought within the grasp of the microscope.

At the time that Dr. Sanderson was writing this report, a young German physician, named Koch, occupied with the duties of his profession in an obscure country district, was already at work, applying, during his spare time, various original and in-

genious devices to the investigation of splenic fever. He studied the habits of the rod-like organisms, and found the aqueous humor of an ox's eye to be particularly suitable for their nutrition. With a drop of the aqueous humor he mixed the tiniest speck of a liquid containing the rods, placed the drop under his microscope, warmed it suitably, and observed the subsequent action. During the first two hours hardly any change was noticeable; but at the end of this time the rods began to lengthen, and the action was so rapid that at the end of three or four hours they attained from ten to twenty times their original length. At the end of a few additional hours they had formed filaments, in many cases a hundred times the length of the original rods. The same filament, in fact, was frequently observed to stretch through several fields of the microscope. Sometimes they lay in straight lines parallel to each other, in other cases they were bent, twisted, and coiled into the most graceful figures; while sometimes they formed knots of such bewildering complexity that it was impossible for the eye to trace the individual filaments through the confusion.

Had the observation ended here an interesting scientific fact would have been added to our previous store, but the addition would have been of little practical value. Koch, however, continued to watch the filaments, and after a time noticed little dots appearing within them. These dots became more and more distinct, until finally the whole length of the organism was studded with minute ovoid bodies, which lay within the outer integument like peas within their shell. By-and-by the integument fell to pieces, the place of the organism being taken by a long row of seeds or spores. These observations, which were confirmed in all respects by the celebrated naturalist, Cohn, of Breslau, are of the highest importance. They clear up the existing perplexity regarding the latent and visible contagia of splenic fever; for in the most conclusive manner Koch proved the spores, as distinguished from the rods, to constitute the contagium of the fever in its most deadly and persistent form.

How did he reach this important result? Mark the answer. There was but one way open to him to test the activity of the

contagium, and that was the inoculation with it of living animals. He operated upon guinea-pigs and rabbits, but the vast majority of his experiments were made upon mice. Inoculating them with the fresh blood of an animal suffering from splenic fever, they invariably died of the same disease within twenty or thirty hours after inoculation. He then sought to determine how the contagium maintained its vitality. Drying the infectious blood containing the rod-like organisms, in which, however, the spores were not developed, he found the contagium to be that which Dr. Sanderson calls "fugitive." It maintained its power of infection for five weeks at the furthest. He then dried blood containing the fully developed spores, and exposed the substance to a variety of conditions. He permitted the dried blood to assume the form of dust; wetted this dust, allowed it to dry again, permitted it to remain for an indefinite time in the midst of putrefying matter, and subjected it to various other tests. After keeping the spore-charged blood, which had been treated in this fashion for four years, he inoculated a number of mice with it, and found its action as fatal as that of blood fresh from the veins of an animal suffering from splenic fever. There was no single escape from death after inoculation by this deadly contagium. Uncounted millions of these spores are developed in the body of every animal which has died of splenic fever, and every spore of these millions is competent to produce the disease. The name of this formidable parasite is *Bacillus anthracis*.\*

Now the very first step towards the extirpation of these contagia is the knowledge of their nature; and the knowledge brought to us by Dr. Koch will render as certain the stamping out of splenic fever as the stoppage of the plague of pébrine by

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\* To produce its characteristic effects the contagium of splenic fever must enter the blood. The virulently infective spleen of a diseased animal may be eaten with impunity by mice. On the other hand, the disease refuses to be communicated by inoculation to dogs, partridges, or sparrows. In their blood *Bacillus anthracis* ceases to act as a ferment. Pasteur announced more than six years ago the propagation of the vibrios of the silkworm disease called "flacherie," both by scission and by spores. He also made some remarkable experiments on the permanence of the contagium in the form of spores. See "Études sur la Maladie des Vers à Soie," pp. 168 and 256.

the researches of Pasteur. One small item of statistics will show what this implies. In the single district of Novgorod in Russia, between the years 1867 and 1870, over fifty-six thousand cases of death by splenic fever, among horses, cows, and sheep, were recorded. But its ravages did not confine themselves to the animal world, for during the time and in the district referred to, five hundred and twenty-eight human beings perished in the agonies of the same disease.

A description of the fever will help you to come to a right decision on the point which I wish to submit to your consideration. "An animal," says Dr. Burdon Sanderson, "which perhaps for the previous day has declined food and shown signs of general disturbance, begins to shudder and to have twitches of the muscles of the back, and soon after becomes weak and listless. In the meantime the respiration becomes frequent and often difficult, and the temperature rises to three or four degrees above the normal; but soon convulsions, affecting chiefly the muscles of the back and loins, usher in the final collapse, of which the progress is marked by complete loss of power of moving the trunk or extremities, diminution of temperature, mucous and sanguinolent alvine evacuations, and similar discharges from the mouth and nose." In a single district of Russia, as above remarked, fifty-six thousand horses, cows, and sheep, and five hundred and twenty-eight men and women, perished in this way during a period of two or three years. What the annual fatality is throughout Europe I have no means of knowing. Doubtless it must be very great. The question, then, which I wish to submit to your judgment is this: Is the knowledge which reveals to us the nature, and which assures the extirpation of a disorder so virulent and so vile worth the price paid for it? It is exceedingly important that assemblies like the present should see clearly the issues at stake in such questions as this, and that the properly informed common sense of the community should temper, if not restrain, the rashness of those who, meaning to be tender, would virtually enact the most hideous cruelty by the imposition of short-sighted restrictions upon physiological investigation. It is a modern instance of zeal for God, but not according to knowledge, the excesses of which zeal an instructed public opinion must correct.

And now let us cast a backward glance on the field we have traversed, and try to extract from our labors such further profit as they can yield. For more than two thousand years the attraction of light bodies by amber was the sum of human knowledge regarding electricity, and for more than two thousand years fermentation was effected without any knowledge of its cause. In science one discovery grows out of another, and can not appear without its proper antecedent. Thus, before fermentation could be understood, the microscope had to be invented and brought to a considerable degree of perfection. Note the growth of knowledge. Leeuwenhoek, in 1680, found yeast to be a mass of floating globules, but he had no notion that the globules were alive. This was proved in 1835 by Cagniard de la Tour and Schwann. Then came the question as to the origin of such microscopic organisms, and in this connection the memoir of Pasteur, published in the "Annales de Chimie" for 1862, is epoch-making, proving, as it did to all competent minds, spontaneous generation to be thus far a chimera. On that investigation all Pasteur's subsequent labors were based. Ravages had over and over again occurred among French wines. There was no guarantee that they would not become acid or bitter, particularly when exported. The commerce in wines was thus restricted, and disastrous losses were often inflicted on the wine grower. Every one of these diseases was traced to the life of an organism. Pasteur ascertained the temperature which killed these ferments of disease, proving it to be so low as to be perfectly harmless to the wine. By the simple expedient of heating the wine to a temperature of fifty degrees centigrade, he rendered it inalterable, and thus saved his country the loss of millions. He then went on to vinegar—*vin aigre*, acid wine—which he proved to be produced by a fermentation set up by a little fungus called *Mycoderma aceti*. *Torula*, in fact, converts the grape-juice into alcohol, and *Mycoderma aceti* converts the alcohol into vinegar. Here also frequent failures occurred and severe losses were sustained. Through the operation of unknown causes the vinegar often became unfit for use, sometimes, indeed, falling into utter putridity. It had been long known that mere exposure to the

air was sufficient to destroy it. Pasteur studied all these changes, traced them to their living causes, and showed that the permanent health of the vinegar was insured by the destruction of this life. He passed from the diseases of vinegar to the study of a malady which a dozen years ago had all but ruined the silk-husbandry of France. This plague, which received the name of "pébrine," was the product of a parasite, which first took possession of the intestinal canal of the silkworm, spread throughout its body, and filled the sack which ought to contain the viscid matter of the silk. Thus smitten, the worm would go automatically through the process of spinning when it had nothing to spin. Pasteur followed this parasitic destroyer from year to year, and, led by his singular power of combining facts with the logic of facts, discovered eventually the precise phase in the development of the insect when the disease which assailed it could with certainty be stamped out. Pasteur's devotion to this inquiry cost him dear. He restored to France her silk-husbandry, rescued thousands of her population from ruin, set the looms of Italy also to work, but emerged from his labors with one of his sides permanently paralyzed. His last investigation is embodied in a work entitled "Studies on Beer," in which he describes a method of rendering beer permanently unchangeable. That method is not so simple as those found effectual with wine and vinegar, but the principles which it involves are sure to receive extensive application at some future day. Taking into account all these labors of Pasteur, it is no exaggeration to state that the money value of his work would go far to cover the indemnity which France had to pay to Germany.

There are other reflections connected with this subject which, even were I to pass them over without remark, would sooner or later occur to every thoughtful mind in this assembly. I have spoken of the floating dust of the air, of the means of rendering it visible, and of the perfect immunity from putrefaction which accompanies the contact of germless matter and moteless air. Consider the woes which these wafted particles during historic and prehistoric ages have inflicted on mankind; consider the loss of life in hospitals from putrefying wounds; consider the

loss in places where there are plenty of wounds but no hospitals, and in the ages before hospitals were any where founded; consider the slaughter which has hitherto followed that of the battle-field, when those bacterial destroyers are let loose, often producing a mortality far greater than that of the battle itself; add to this the other conception that in times of epidemic disease the self-same floating matter has frequently, if not always, mingled with it the special germs which produce the epidemic, being thus enabled to sow pestilence and death over nations and continents—consider all this, and you will come with me to the conclusion that all the havoc of war, ten times multiplied, would be evanescent if compared with the ravages due to atmospheric dust.

This preventable destruction is going on to-day, and it has been permitted to go on for ages, without a whisper of information regarding its cause being vouchsafed to the suffering, sentient world. We have been scourged by invisible thongs, attacked from impenetrable ambuscades, and it is only to-day that the light of science is being let in upon the murderous dominion of our foes. Men of Glasgow, facts like these excite in me the thought that the rule and governance of this universe are different from what we in our youth supposed them to be; that the inscrutable Power, at once terrible and beneficent, in whom we live and move and have our being and our end, is to be propitiated by means different from those usually resorted to. The first requisite towards such propitiation is knowledge; the second is action, shaped and illuminated by that knowledge. Of knowledge we already see the dawn, which will open out by-and-by to perfect day, while the action which is to follow has its unfailing source and stimulus in the moral and emotional nature of man—in his desire for personal well-being, in his sense of duty, in his compassionate sympathy with the sufferings of his fellow-men. "How often," says Dr. William Budd in his celebrated work on typhoid fever, "have I seen in past days, in the single narrow chamber of the day-laborer's cottage the father in the coffin, the mother in the sick-bed in muttering delirium, and nothing to relieve the desolation of the children but the devotion of some poor neighbor, who in too



many cases paid the penalty of her kindness in becoming herself the victim of the same disorder." From the vantage-ground already won, I look forward with confident hope to the triumph of medical art over scenes of misery like that here described. The cause of the calamity being once clearly revealed, not only to the physician, but to the public, whose intelligent coöperation is absolutely essential to success, the final victory of humanity is only a question of time. We have already a foretaste of that victory in the triumphs of surgery as practiced at your doors.

*Sciatic Nerve United by Suture.*—Mr. Farrell ("Boston Medical Journal") stated that Mr. Wheelhouse inserted sutures into the ends of a divided sciatic nerve with apparently the ultimate result of obtaining union between the two portions, restoring functional continuity. Langenbeck has since performed the same operation in a case in which the nerve had remained divided for two years. Two months after the operation there was an increase in sensation, but not in motion.

*Astigmatism—Its Rapid Diagnosis.*—M. Bravais, of Lyons, France, has adopted a simple ophthalmoscopic device to effect a rapid diagnosis of astigmatism. While examining the inverted image, if at the moment the optic papilla is seen at the centre of the glass, lateral movements are given to the objective lens, the ophthalmoscopic image moves also, but varying in degree according to the refraction. If the eye be myopic, the movement is less extensive, if hypermetropic, more extensive than that of the lens, and if emmetropic the papilla continues visible at the centre of the lens, the displacement of the image and glass being equal, so that by moving the objective lens in different directions, it may be quickly determined which of the meridians is emmetropic, hypermetropic or myopic.

*The "American Practitioner,"* December 1876, says "that more than thirty thousand dollars has been expended upon it during the eleven years of its existence. To our sorrow it can not be said that advertisers and subscribers have paid all this."

## CLINICAL RECORDS.

"Ex principiis, nascitur probabilitas: ex factis, vero veritas."

ART. I.—*Pott's Disease—Lumbar Abscess—Treated with Dr. Charles Fayette Taylor's Spinal Assistant—Prospective Recovery.* By BENJ. H. RIGGS, M. D., Selma, Ala., Secretary of the Medical Association of Alabama, etc.

I am induced to write a report of the following case of "Angular Curvature of the Spine," or "Pott's Disease," because it was very instructive to me, and because I do not think the modern treatment of this class of cases is sufficiently generally known by the mass of the Profession. I doubt not but there are many poor hump-backs in the land who might have been cured, and spared the incubus of the deformity which hangs to them through life, like the "old man of the woods" to the back of Sinbad, a perpetual source of humiliation to themselves and friends; cured by their own attending physicians with no inordinate expense of money or labor, to say nothing of the numerous little graves which might have been deprived of their victims by the timely arrest of this exhausting disease.

I spoke of the "modern treatment," I mean the treatment advocated and used by Drs. Charles Fayette Taylor, and Lewis A. Sayre, of New York; a treatment based upon a rational pathology, founded upon clinical experience.

The revolution in the treatment of Pott's Disease and hip-joint disease within the last twenty years is complete, and the success is marvellous. Go to any of the old surgeries; any of the standard text-books that you find commonly in the offices of practicing physicians, and you find but little hope for your patient or encouragement for yourself; the prognosis is gloomy; the out-look in every direction repulsive. In Pott's Disease there may be some hope of curing your little patient if you can keep him long enough recumbent to allow of union of the separated vertebræ, and he don't die of debility in the meantime; flat upon his back for months together! How different from the modern treatment!

I will merely touch upon the salient points of the modern treatment of Pott's Disease; I can not in this article say anything about hip-joint disease.

Dr. Taylor states, and Dr. Sayre agrees with him, that a large percentage of these cases of disease are traumatic, or the result of mechanical violence to the point involved. I believe that this percentage is larger than we can yet reasonably contend for, owing to the difficulty of getting reliable histories of each case; for instance in my case, the cause of injury to the spine was not discovered until within the last three months, and then in a circuitous way, as will appear further on. Dr. Taylor states that in his private practice fifty per centum are traumatic; and in his general practice thirty-nine per cent. are likewise due to injury. May we not account for this difference in furtherance of the idea advanced above on the score of private patients belonging to the intelligent and wealthy class, who can trace sequences back better than the less favored classes? Those who sift most thoroughly the facts of the cases find that some violence was done; how many acts of violence are done to children that never get beyond the knowledge of heartless nurses!

Believing, then, that Pott's Disease is due to destructive inflammation of the intervertebral cartilages, eventually extending to the bones and producing caries thereof, and that it is primarily traumatic in nearly all cases, the modern practice starts hopefully to work, not weighed down by the idea of inherited scrofulosis, or local tubercular deposit, to relieve the local inflammation, and to invigorate and sustain the vital forces until nature can eradicate and repair.

The plan is to take off pressure from the inflamed parts and persistently keep it off until repair takes place, at the same time looking to the constitutional vigor. This is accomplished by any mechanical means that one may have the ingenuity to contrive, keeping in view the entire relief from pressure, the perfect comfort of the patient, and freedom to exercise and go about. Dr. Taylor has a very ingenious contrivance which he styles "The Spinal Assistant"; it answers the purpose exceedingly well. Dr. Sayre has displayed much merit in the same direction.

But I must pass on, as I fear I may be too prolix in any way. Another interesting point is that much bone disease may

exist with comparatively little pain; pain is no longer necessary to a diagnosis; muscular hyperæsthesia, myalgia, and kyphosis are more distinctive. Again, if an abscess occurs the modern surgeon opens it, and opens it freely; a large lumbar or dorsal abscess is to be opened at once and all the pus evacuated; the longer it remains, the more the damage it does; damage from pus pent up around the carious bones that gave it origin, thus irritating them and preventing their healing, and damage anew from destroying the periosteum of any bone against which it may press. How different this from the cautious use of the trocar and canula, the valvular opening, and the timid policy laid down in surgical works for fear of septicæmia and an exhausting drain! If an abscess occurs in Pott's or hip-joint disease, it is to be opened, and opened speedily and effectually, and to stay open until the supply of pus stops at its source, which it will do if the malady is properly treated.

April 22, 1876, Charley J., white, aged four years, was brought to me at my office in his baby-carriage by his father. He was pale, care-worn, and evidently the victim of much suffering. When sitting in his carriage he supported himself upon the palms of both hands by pressing on the buggy seat so as to support his superincumbent weight. When placed upon the ground, he walked upon the tip of his left toes, the right being normal, and with much difficulty; soon retreated to his carriage, or begged to be taken up. There was some excess in size of the left leg over the right; the left leg was generally drawn up (so as to take tension off the psoas magnus muscle, as afterwards appeared). Parent stated that the child had been sick ever since he was a baby; had what was called spinal meningitis by Dr. Loomis, of New York; had been troubled with general hyperæsthesia; had had an obstinate and protracted cough; had been much troubled with pain in the bowels and tympanitis; was backward in talking; had always walked awkwardly and fell down readily; now it was his left leg that was painful and contracted; last October it was his right leg. He had been under the treatment of several physicians; some said he had spinal disease; some said hip-joint disease, and some rheumatism. He never complained of pain in the back.

Palms of the hands were hot, indicating an irritative condition. Examination revealed no spinal curvature, lateral or angular, or sensitiveness; succussion or palpation over the acetabulum revealed no sensitiveness in the hip-joint. The child had a close phimosis, and had had much difficulty in voiding his urine. Possibly here was the explanation of his trouble; spinal anæmia from reflex irritation of Sayre.

Obtaining the consent of his parents, with the assistance of Dr. W. H. Johnston, on the 25th of this month (April), three days after the first visit, I operated for phimosis and relieved the trouble. I will state that on this occasion Dr. Johnston threw a key on the floor, and the little fellow stooped over and picked it up, thus indicating some spinal flexibility. At the same time he was ordered to be brought daily to my office for faradization; a stimulating embrocation to spine and enlarged limb directed; was put upon a mixture of the comp. syrup. of the phosphates of iron, quinia, and strychnia, and the syrup of the lacto-phosphate of lime; told to exercise daily in moderation, eat good food and take a daily allowance of wine or milk toddy. Under this very improper treatment the patient grew no better, as one might suppose, but he rather got worse.

Early in July a bulging in the lumbar region was discovered by his parents; they having become somewhat discouraged at my want of success, even after the painful operation of phimosis, were slow about announcing the fact to me, but let one of his attendants, a so-called homœopath, know it, who fully impressed them with the idea that hip-joint disease was now clearly developed, as he had told them before, and that they must not allow anything to be done to the enlargement, as it would soon go down. When the case was again shown me, I at once recognized lumbar abscess, and became satisfied that we had to do with Pott's Disease. I urged upon them the importance of opening the abscess at once; the parents demurred; the homœopath had too fully made them alive to the danger of such procedure. I retired, with the statement that if they wished me to open the abscess I would do so at any time that suited them.

My old friend, now gathered to rest, Dr. S. W. Vaughan, a retired physician of more than fifty years practice, a man of

earnest feelings and filled with the true spirit of the physician, having become interested in the case from my description, and having seen him at my office, joined with me, supplementing me, in urging the necessity of opening the abscess. Having gained their consent on the 17th of July, Dr. Vaughan being present, I opened the abscess with the aid of a trocar and canula; upon removing the trocar the pus spurted out several feet, and at least a pint of grayish, soupy matter was evacuated, much to the comfort of the patient. It was now evident that the flexing of the thigh on the body, with the tumefaction of the limb, was due to the presence of this pus along the course and at the origin of the psoas magnus muscle. The conclusion was that there was disease of one of the lumbar vertebræ near the origin of this muscle. It was barely possible that the abscess might have caused all the trouble and might have been due to pyogenic inflammation on the course of the muscle; the spinal origin was still not clear. But upon the idea that lumbar abscess was nearly always, if not always, associated with Pott's disease, though Dr. Vaughan stated that he had in his long experience seen several such abscesses which seemed not to have had such cause, as upon being opened they got well and no future trouble followed, I determined to write to Dr. Taylor upon the subject and get his advice. Dr. Taylor being absent from the city on his summer vacation, Dr. Thomas M. L. Chrystie, his partner, replied in a letter which breathes so much of the spirit which swells in the breast of every true lover of his profession in its outgoing for the relief of his fellow man, and is so strikingly at variance with the "trade spirit" which is now gaining full mastery of the masses of the Profession, juggling ruthlessly the old time doctor of the Hippocratic Oath and regular patrons, not patients, that I take the liberty of publishing it, even without his knowledge, to say nothing of consent. The spinal assistant he sent came to hand and cost nothing but the expressage, and has served to make a family happy over the prospective restoration to them of their first-born son in his proper health and image.

NEW YORK, July 29, 1876.

Dr. Benj. H. Riggs, Selma, Ala.:

Dear Sir,—Your letter of the 23d inst. to Dr. Taylor was received this morning. Dr. Taylor left the city on the 28th inst. for his vacation of five weeks or so, and I beg leave to reply for him.

We make our own apparatus, and do not know of any instrument-maker who can make an apparatus for such cases as you describe without a great deal of personal supervision, and perhaps then be unsuccessful. Still we know it is the fashion to leave such things in the hands of such gentlemen. I beg leave to refer you to a printed letter by Dr. Taylor, which I will send you, for further views on this point and information as to the necessity of gradual changes or repairs to be made in the apparatus to maintain its effect.

Permit me to say a few words on diagnosis. Place the most reliance upon the examination of the patient with the eye. If a child, strip him, and while he moves about the room or plays, keep a careful eye on his vertebral column. Throw some article on the floor for him to pick up, and see if he squats or places his hands on his knees, thus avoiding instinctively the flexion of the spinal column, which causes the vertebral bodies—the anterior portion of the column only being the seat of the inflammation—to infringe on each other; or the patient may sit or stand in front of you with his back towards you, and while you hold his hips with your hands ask him to bend forward. A want of flexibility at any particular point of the spinal column may indicate inflammation at the vertebral or intervertebral bodies. This behavior of the spinal column, while it is performing the functions common to it, we consider as the most important means of diagnosis. It is independent of the patient's volition when answering to the influence of an inflamed condition of its parts. And then we so often have a diseased condition of joints without any *expression of pain* from the patient. Succussion we never resort to. Pain, when present, is of course an important element in diagnosis.

In deciding how to comply with your request, I am actuated by what might be best for the little patient under the circumstances represented by you. I therefore send you by express a "spinal assistant," in the main such as Dr. Taylor would use. But every case requires a slightly different apparatus, though constructed on the same principles of treatment. For the same reason no brace can be made to "fit" a patient who is not before the person who has made or applies the brace. You will probably therefore have to bend, rivet, shorten, lengthen, or twist the brace sent you until it answers the indications presented by your case; and this process will have to be repeated as the treatment goes on (vide printed letter). The entire brace is of malleable steel, so that it can be bent. A couple of screw wrenches are good tools to seize it with. In the case you write of, where destruction of vertebral bodies has already occurred, as indicated by the abscess and the kyphosis (the former indicating that probably much of the anterior portion of the vertebral column is diseased that has not broken down), it will be many years before the reparative process is complete and the patient can abandon the local support furnished by the spinal assistant. You are welcome to the "spinal assistant"

sent you. It may be of service to you in contriving something better, or may just suit the case with alterations in your power to make.

Very respectfully,

THOS. M. L. CHRYSTIE, M. D.

P. S. Your letter will be placed with others awaiting Dr. Taylor's return. My apology for this letter is that I have been associated with Dr. Taylor during the past nine years in this practice.

In a few days the "spinal assistant" arrived with an ample supply of webbing and extra buckles; a bent piece of leaden wire and a crude drawing of the shape of the spine having been sent on as a guide in making the instrument. I found but little difficulty in fitting it to the patient. The patient seemed much comforted by the support which he thus received. Soon general improvement was manifested; the abscess ceased to discharge in a week or ten days; the contraction of the limb became less; locomotion was improved; rest at night secured. However, the question arose between the parents and myself as to whether the apparatus should remain on all the time or not, even during the night when in bed. Upon stating the difficulty to Dr. Chrystie he again promptly addressed me the following letter:

NEW YORK, August 15, 1876.

*Dr. B. H. Riggs, Selma, Ala.:*

My Dear Doctor,—Many thanks for the copy of "Transactions of the Medical Association of the State of Alabama for 1875," received this day.

We keep the spinal assistant on the patient always night and day, and never allow the patient to rise from the recumbent (horizontal) position without it for an instant.

Very respectfully,

T. M. L. CHRYSTIE, M. D.

P. S. In "bathing" or washing them, they lie on a blanket spread on a table, the floor, or hard mattress, and after removing the spinal assistant sponge them off, rolling them over carefully from back to side (and sometimes not even that), or the front part of the body, *but never lifting them*. We never allow them to get into a bath-tub until the active stage of the disease has passed (not a shorter period than a year) *and then they must wear a spinal assistant*, varnished or lacquered, so it will not rust.

T. M. L. C.

After this no further difficulty arose, and in December I felt authorized to notify Drs. Taylor and Chrystie that their plan of treatment through me in this case promised complete success, and received from him the following letter:

NEW YORK, December 28, 1876.

*Dr. B. H. Riggs, Selma, Ala.:*

My Dear Doctor,—We are very glad to hear of your success in the case of Pott's disease. Of course it will take several years to make a *permanent* cure,



but that result is certain and worth working and waiting for, since the disease is of so progressive a character as to certainly cripple or destroy the patient if left to itself.

We shall be happy to see you here at any time, or any friends or acquaintances whom you choose to send us. Are there no medical students in this city from your State who would be interested in spending a few hours, days or weeks in investigating or even looking at what clinical material we can show them at the time of their visit?

Very truly yours,

THOS. M. L. CHERSTIE, M. D.

To-day, February 1st, I have just seen the little patient, and to any observer not aware that he wore a brace, or that he was an invalid, he would present the appearance of a happy, well-nourished healthy child; he has grown perceptibly in the last six months; his expression of countenance is natural and good; his complexion clear and rosy; he limps so little in walking that one would hardly notice it; he runs about at play, at will, with his little brothers; walks up and down stairs without difficulty; his abscess has not discharged any to date; in fact, he promises well. The brace has been on now since early in August, 1876, six months.

I have reported this case thus in detail because I think it can teach a lesson that every physician can appreciate. The details of treatment as given above can not be found in any general work on surgery, so far as I know, and yet they are practical, and such as can be applied by any physician at home without the great expense of going off for treatment to some distant city; to the poor, or those of limited means, this is impossible. Every surgeon should be able to recognize and treat these lesions successfully within his own practice.

The most probable cause of the disease in this case is one ascertained from a neighbor only last fall; she informed the father of this child that a colored woman told her she knew what was the matter with Charley J.'s back; that his nurse when visiting in a neighbor's kitchen, when he was fourteen months old, stood him up in a rocking-chair, and while in this attitude he fell over so that the arm of the chair struck against the small of the back, and that she suddenly grabbed at him to prevent him from falling to the floor, and in the effort

to catch him pressed him with a good deal of force against the arm of the chair, his head and shoulders hanging over. The child cried as if much hurt, and for a long time was unable to stand on his feet. Of course this fact was kept from his parents, who were much puzzled to know what could be the matter. I learned that he also had a fall out of the door of his father's house, shortly afterwards, from a height of over two feet, and the point of the end of one of the steps struck his back near the place of the abscess.

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ART. II.—*Depressed Compound Fracture of the Skull.* By J. R. BUCHANAN, M. D., Clarksville, Mo.

I was called at 1 o'clock at night, September 7, 1873, to see J. G. (colored), aged sixty-eight years, who, about seven hours previously, had received a fracture of the skull caused by a stroke with a portion of an ordinary skillet thrown by another negro. The flange had previously been broken off the skillet, leaving an A-shaped portion attached to the bottom. This was thrown about fifteen feet, striking the patient on the left side of the head in front of the ear with that portion of the missile to which was attached the A-shaped projection, producing an incised wound through the scalp and a depressed fracture of the os parietal and os temporal of about two and a half inches in length, and extending from the central antero-posterior of the lower with the middle third of the os parietal forwards and downwards to near a point in the temporal bone opposite the centre zygoma. The bone was driven in upon the brain in such a manner as to constitute an inverted arch. After a thorough examination of the wound, I determined to try to elevate the depressed bone by means of leverage with an ordinary elevator. I did not think, however, that the patient would survive the operation. After a considerable number of trials, using all my strength, I succeeded in removing two pieces of the external table, measuring one inch and one and five-eighths inch in width, and three-eighths inch and one-half inch in width, respectively,

and two pieces of the internal table, one-half and five-eighths inch in length, and one-quarter and three-eighths inch in length. There yet remained two depressed pieces of the internal plate forming an inverted arch, which was exerting considerable compression on the brain. These I was unable to remove without trephining, and considering the case a hopeless one, I declined performing that operation. I dressed the wound with the cold-water dressing, mixing with *oj.* of water ℥j. of carbolic acid, leaving the wound open. Gave pulv. Doveri, grs. viij.; potas. nit., grs. v., every four or six hours, as was required to keep him quiet. Tinct. verat. vir., miiij., every three hours to govern the inflammatory symptoms.

*September 8th.*—Found him with considerable fever, partial delirium. Continued treatment.

*September 9th.*—Pulse rapid; fever high; delirium continues with occasional rationality for a few minutes; tongue furred; bowels constipated. Continued treatment, with the addition of an active mercurial and podophyllin purge.

*September 11th.*—Wound suppurating slightly; fever somewhat abated; delirium continues; tongue less coated, the bowels having been thoroughly moved.

*September 12th.*—Found all his symptoms better; wound freely suppurating. Applied carbolized oil—oil oliv., ℥j., carbolic acid, ℥j.—over the water-dressing. Continued Dover's powder, nitrate potash, and tincture veratrum viride, as is required to meet the symptoms. He slowly improved from day to day, and occasionally I would remove a small piece of necrosed bone until September 28th, when I ceased visiting him, the wound being in a favorable condition to heal, yet his mind was considerably impaired.

*December 10th.*—Wound entirely healed; man at work; says he feels as well as ever he did; no pain in head; mind still impaired to some extent.

*June 5th, 1874.*—Health good, and yet no evidence of epilepsy from compression of brain.

## PROCEEDINGS OF SOCIETIES.

"Etsi non prosunt singula, juncta juvant."

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**The Central Kentucky Medical Association.**

The Association met at Danville, Ky., in the Knights of Pythias' Hall, on the 17th of January, 1877, at the usual hour, the Vice-President, Dr. S. P. Craig, of Stanford, in the chair. Present, Drs. Plummer, Carpenter, Neet, Spilman, McMurtry, Tucker, J. L. Price, McKee, Harlan, Meyer, Trueheart, Dunlap, Willis, McGee, Bailey, W. A. Brown, Evans, Nelson, Cowan, A. D. Price, and Erwin, and Dr. E. S. Gaillard, of Louisville.

The debate was opened by Dr. John D. Neet, of Versailles, the appointee, with a lengthy and able paper on "Chloroform and Ether, their Comparative Merits as Anæsthetics, and the best Mode of Administration," the question for the day.

In the opening pages the long controversy which had been waged by the advocates of these drugs was reviewed, and which he deprecated as tending to confuse the mind and obscure the truth. After which the history of anæsthesia was given, the discovery of which was ascribed to Morton, though proper credit was given to others whose names are connected with its development. The chemical properties of ether and chloroform were then taken up, and their essentially distinct and different natures indicated, as well as the difference in strength that often occurs in different specimens of the same anæsthetic. He spoke of the great importance in administering either drug, of obtaining a pure article, giving the specific gravity of the most reliable of each, and said that the next most important step in the process was to secure a competent person to administer it, one well acquainted with the physiological and psychological effects of the agent in his hands should be selected. Considerable stress was laid on these two points as necessary in averting much of the danger in the use of anæsthetics. After describing the physiological action of both drugs at length, and the three stages of anæsthesia, he said, in speaking of the last stage—muscular relaxation—that the first marked difference

in the action of the drugs is found here. Ether retains its stimulation to the heart; in chloroform this yields to depression. The vaso-motor disturbance is most marked in chloroform narcosis, if not very dilute, and this leads, he said, to paralysis of the vaso-motor centres, with consequent capillary congestion and threatened stasis. In ether, this portion of the vascular system remains stimulated under full anæsthesia, with contraction of the vessels, and with increased rather than diminished tone, and their propulsive power remains vigorous until some other vital power is almost wholly compromised, and hence, he said, paralysis of the sympathetic is one of the indications of approaching death in chloroform narcosis, while in ether such does not occur primarily.

Considerable space was embraced in explaining the causes of death by anæsthetics, and in enumerating the conditions of the system which are more favorable and unfavorable to their action, placing at the head in the latter chronic alcoholism. Schiff's results of his five thousand experiments on the differences between anæsthesia produced by ether and chloroform were given.

Copious statistics bearing on the relative and comparative value of these drugs and the percentage of death rate arising from their use were brought forward, which, he said, he did with the greatest reluctance, knowing full well their utter inutility in enabling us to more definitely solve this vexed question. Before the truth can be had of the real merits of these anæsthetics, he said, a much more thorough understanding of their physiological action must be obtained, as well as more attention paid to the mental and physical state of the patient, and to the details of administration. He referred in this connection to the published records of the disastrous consequences resulting from the reckless and indiscriminate use of chloroform and ether, and said that with the present existing data no one could safely claim unconditional superiority for either drug over the other.

In considering the means to be employed in resuscitation from apparent death, he said it was of the first importance to excite respiration by artificial means, and preferably by Sylvester's method. Electricity applied to the phrenic nerves; dry heat,

accompanied by friction in the direction of the heart; mouth to mouth insufflation; ice in the rectum, and Nélaton's method, were mentioned as the most effective, and the manner of application explained.

He spoke favorably of the plan of giving an opiate before administering the anæsthetic, and adduced therefor several excellent reasons. More lately, atropia had been combined with morphia, and the combination, he said, had been strongly advocated. They should be given an hour before the use of the anæsthetic.

The various instruments and apparatus devised for the better administration of these drugs were reviewed, and their construction and merits explained, in which he rather expressed his preference for Skinner's apparatus for chloroform, and Allis' inhaler for ether.

In conclusion, he said, "the most serious objection to these inhalers is that there is apt to be a great lack of familiarity with their practical working and efficiency, which will militate against their universal adoption in practice; for experimental therapeutics, to be followed by any satisfactory knowledge, must be carried to a degree that is inadmissible in this field of study. It has been said that anæsthesia is nothing more than carrying a man to death's door and bringing him back again, and with our meagre knowledge of the minutiae or the exact action of these drugs, to employ any and every apparatus that is thrown upon the market, when the claim that it satisfies 'a want long felt by the Profession,' is equivalent to equipping ourselves with an instrument with which to open death's door, and thus sound the key note which tends to bring into disrepute that process which has been so active in the deliverance of doomed lives and their full restoration to the goods and pleasures of human existence."

Dr. Dunlap, of Danville, after complimenting the paper highly, said that he believed the rapid inhalation of chloroform contributed no little to its fatal results. He had long used a combination of alcohol and chloroform with satisfactory results. Of the inhalers, he preferred Allis' ether inhaler. Preparing the patient for the anæsthetic he regarded as a great assist-

ance, and thought it should not be neglected. He had used chloroform formerly a great deal in childbirth, but of late years he had come to believe that it tended to cause uterine hæmorrhage, and had left it off in a great measure.

Dr. Spilman, of Harrodsburg, thought the subject of great interest, and in a practical point of view without a parallel in importance. He had listened with great pleasure to the luminous and exhaustive paper just read, and he doubted whether he ought to make any additional remarks, for fear of obscuring the light Dr. Neet had thrown on the subject. He had been employing anæsthetics, he said, since 1848; sometimes ether and sometimes chloroform. At first he used ether more frequently, but on account of the largeness of the amount required, its great liability to produce laryngeal, bronchial, and gastric irritation, the difficulty in maintaining the anæsthetic phenomena when once established, and the impracticability of using it at all in many subjects, he substituted chloroform, though believing it to be more dangerous. Its pleasantness, promptness, smallness of dose required, the ease with which its influence is maintained, its less irritating effects, and the universality of its application, rendered it a much more efficient and satisfactory agent in his hands, and he now seldom used any other. Being fully aware of the extreme caution necessary to its safe administration, he had, in consequence, never had any unfavorable result. Such is the superiority of chloroform, he said, that it was a question worthy our serious consideration whether it may not be employed under such limitations and restrictions as to render it as safe as ether? He thought it might by a careful study of the philosophy of its operation, and by limiting it to those special vital states which constitute the chloroform tolerance. These, he said, are the only conditions in which anæsthetics are practically useful, and their accurate diagnosis is not only attainable, but exceedingly important. The extent to which certain vital changes will modify and control remedial agents, he said, is wonderful. An agent rapidly fatal in one condition is as speedily restorative in another. The physiological action of chloroform is that of a depressant. In shock, in intense physical suffering, it is a powerful stimulant. This

fact, he said, was familiar to every medical observer. Since it is known what constitutes the opium tolerance, the quinine tolerance, etc., etc., why can not, he asked, the chloroform tolerance be ascertained?

The touchstone (the safety-valve of anæsthesia), he said, was the order in which the various functions of the organisms are reached by anæsthetic agents. The phenomena, in the different stages, afford a beautiful illustration of the distinction between common and specific sensibility. The limitation of the anæsthetic action to the nerves of common sensation—the seat of pain—always reached first; while specific sensibility—consciousness—remains intact, is the goal. Every experienced operator, he said, would bear him out in the assertion that complete insensibility to pain is reached before consciousness is suspended. This is an eligible stage for the operation; beyond it is unnecessary and unsafe, whether produced by chloroform or ether. Whenever specific sensibility is reached to the extent of coma, the apoplectic snore, the dilated pupil, and upturned eyeball, he said, the confines of vital extinction are reached, and we are admonished to desist. He had performed painless operations, but had never overthrown consciousness.

Dr. Harlan, of Danville, regarded the paper just read as very interesting and instructive, and he agreed with Dr. Neet as to the importance, in the use of either anæsthetic, of obtaining a pure article. He coincided with the views expressed by the gentleman who had just preceded him, that as little as possible of the anæsthetic should be used, and that it should never be pushed to the point of coma. It is difficult, however, he said, to ascertain in all cases exactly when to cease the inhalation. He considered chloroform to be on many accounts the safest, best, and speediest under proper precautions.

Dr. McKee, of Danville, had nothing to add to what had already been said on the subject, save to state that the greatest caution and care should be observed in the use of both drugs. They are powerful agents, and perhaps, he said, more fatal in minor than in great operations. Their use in childbirth was unpleasant, and he believed had best be dispensed with.

Dr. Cowan, of Danville, after some remarks contrasting the



relative merits of the two anæsthetics, as well as their action in parturition and great shock, said when it was necessary to resort to an anæsthetic, it should be given to the full.

Dr. Plummer, of Harrodsburg, expressed his cordial approval of the opening paper, and thought it very thorough and complete. Before administering an anæsthetic he always gave whisky, and he believed with advantage. He used a common towel, allowing air at intervals, and but as little of the anæsthetic as possible. The fatal results following the use of these drugs he considered in a great measure due to the fear of the patient.

Dr. Meyer, of Danville, believed with Dr. Plummer, that fear had much to do in causing the mortality resulting from the employment of anæsthetics. Not only, he said, should the consent of the patient be obtained before administering them, but his confidence also, if possible. He did not think there was much difference between ether and chloroform, but for country practice the latter was preferable on many accounts. Ether, he said, was clumsier, is followed by more unpleasant results, required a larger amount, and another important consideration, he added, was its inflammability, rendering it dangerous to be used at night.

Dr. E. S. Gaillard (a guest of the Association) being invited by the President to take part in the discussion, expressed his thanks for the courtesy extended him, and said he had listened to the paper just read, and which had been so instructively discussed by the members, with much pleasure and profit. The author of it was entitled to much praise for the exhaustive method of its preparation, and he thought the subject had been so thoroughly discussed by him, and the members following, that there was little that any one could say in addition. He was glad, he said, to find that Dr. Neet had taken a brief but correct view, in his judgment, of the history of the subject under discussion. While a great deal of time and labor had been wasted in discussing the comparative credit to be given to Morton, or Jackson, or Wells, there could be no doubt, even though Morton had ante-dated Jackson and Wells in the employment of ether anæsthetically, but that his own countrymen had used the drug for somewhat similar purposes a generation in advance of

him. Warren, of Boston, he said, had used ether for subduing the pain of inflammation as early as 1806. Smead, of Cincinnati, had used it in a similar manner in 1822; while it had been used for producing insensibility by Godman, Mitchell, Samuel Jackson, and Bache, in the early part of the present century. That Morton was the first to suggest its use for relief of pain in surgical operations, was, he believed, undeniable; but its use for the relief of pain in general practice had been suggested before Morton; and many American physicians had so used and prescribed it before Morton's attention had been directed to it. Morton should have all the praise to which he was entitled, but no more.

It was equally interesting to know, he said, that long before Simpson's attention had ever been directed towards the use of chloroform, an American, Samuel Guthrie, of Sackett's Harbor, New York, had repeatedly described and used this agent; so that it was pleasant to find, even in a cursory examination into the history of anæsthetics, that Americans had played so prominent a part.

In regard to the physiological action of chloroform and ether; the tissues initially affected, and the ganglia consecutively impressed, he said, there was indisputably much confusion and antagonism; the question was at least too far undecided to form the basis for practical discussion in a medical society. The same might be said of the pathological records deduced from repeated post-mortem examinations. There was not apparent at such examinations sufficient uniformity of pathological results to enable any one to predicate a tenable opinion upon their specific lesions or upon their comparative merits or demerits. Discarding, therefore, he said, every effort to decide the relative merits of chloroform and ether, so far as physiological and pathological facts could be accepted as guides, it seemed that the careful practitioner should look for guidance rather to clinical phenomena and to the testimony of admitted experts.

In analyzing the clinical phenomena, it seems generally conceded that deaths from chloroform or ether occur in one of three ways; from asphyxia, apnoea, or shock. There could be no question, he said, but that from careless administration of chlo-

reform death from asphyxia can be easily produced; for, when the respiratory area is filled with the vapor of chloroform, it is impossible for the carbonic acid gas to be given off from the blood, and the nerve centres must therefore soon be overwhelmed. This condition produces also a species of *quasi* apnoea, (that is, by preventing oxygen from passing into the blood) before true apnoea, the paralysis of the respiratory centre, occurs. But, he said, while this is true of chloroform injudiciously or recklessly administered, the argument is one against the physician, and not against the drug; for, no one to be trusted with chloroform could make so inexcusable a blunder. If, however, he said, it be insisted that this is a great objection to the use of chloroform, it can be justly asserted that the same objection exists against ether. For if ether be given, as its advocates claim it should be given, rapidly, and so as to overwhelm the patient, asphyxia can certainly be produced; and also that form of apnoea due to a prevention of the ingress of oxygen into the air cells. There is besides, he said, a specific tendency to an actual paralysis of the medulla by ether; for, if this agent acts specifically and disproportionately upon any portion of the nervous system, it does so essentially upon the respiratory centre. If it be claimed that ether is thus prone to produce asphyxia only when recklessly used, and that when given diluted, this danger does not exist, the same defence may be made for chloroform; with this additional argument in favor of chloroform, that while it can always be given diluted, with a sufficiency of atmospheric air without inconvenience to the patient, or fatigue to the physician, ether practically can not be so given, or is not so given. The reason for this fact is that large quantities of ether must be used, quantities not easily carried; that it induces a painful and injurious stage of excitement; is very nauseating and offensive to the patient, and exhausting to the administrator. Ether, given as it must be given and is given by its advocates, he said, is fully as apt to produce asphyxia as chloroform can possibly be in the hands of a prudent physician.

As to death from apnoea, he said, it is true that Schiff had demonstrated in his experiments on dogs, that when ether is used there is paralysis first of respiration, and then of cardiac

movement ; while, when chloroform is administered, the reverse of this is true. It is true, also, that Schiff has demonstrated, he said, that in paralysis of respiration from ether, the heart being unaffected, "artificial respiration" averts the impending danger ; while, with chloroform, the heart, and not the medulla, becomes paralyzed, rendering the physician comparatively helpless. But these experiments, he said, prove only what is true in the lower animals, and whilst they should not be condemned on that account, we should be careful to remember that specific impressions made by medicinal agents on the nervous systems of dogs, may produce very different effects upon man. Besides this, however, every one, he said, who has administered chloroform to any extent, has observed that it is not always the heart which is the first to suffer, as Schiff teaches, but the medulla ; and any experienced administrator of chloroform has learned that it is unsafe to assume that Schiff's teaching is absolutely and uniformly true, he having learned that, contrary to the dicta of this great medical man, respiration is not very infrequently first affected, and the heart subsequently ; and that, under such circumstances, artificial respiration is as efficient with chloroform apnœa as it is with the apnœa from ether.

Again, he said, with ordinary prudence chloroform will not be so given as to render the heart's action ineffective or insufficient ; for, by the occasional use of ammonia on the sponge or towel, the heart can be sustained in effective action through the longest operations. As chloroform is not as prone to paralyze the medulla as ether, and as, when occasionally substituted by ammonia, cardiac danger can be averted, it can be fairly said that death from apnœa with chloroform is less frequent than death from apnœa with ether ; while, if there be greater danger to the heart with chloroform than with ether, this danger, by judicious administration and by the use of ammonia vapor, can be removed.

As to the alleged danger from chloroform in cases of cardiac disease, he said, Dr. H. B. McLeod, Regius Professor of Surgery in the University of Glasgow, has demonstrated that in the Glasgow Hospital chloroform has been preferably used ever since the days of Simpson with great safety ; and that it is regarded

as particularly indicated when the heart is weak in action, or impaired in its valvular integrity. Death from chloroform in the Edinburgh Hospital is never feared, and it is largely and constantly used there.

As to death from shock, he said, no one giving chloroform prudently could easily produce this; indeed, the so-termed deaths from shock are most commonly due to an asphyxia inexcusably induced by a reckless use of the drug. Certainly, he said, ether used as its advocates use it, is fully as likely as chloroform to induce either shock or asphyxia. Either agent given cautiously renders shock rare, and if there be any material danger of shock, this is greater when ether is used, as it seems to at once overwhelm the patient. It is undeniable, he said, that in long operations the heart is more apt to weaken and fail with chloroform than with ether; but if chloroform be given only when the steps of the operation demand its use, and if ammonia be judiciously used, the weakest patient can be safely carried through the longest operations of modern surgery. Chloroform syncope, it is true, is not uncommon, while ether syncope is rare; but such syncope is easily treated by Nélaton's method and by the use of cardiac stimulants. With due precautions in preparing the patient physically, mentally, and morally for the use of anæsthetics, he said, it can not be tenably asserted that ether is safer than chloroform; while it can be said that in its reception and in its secondary effects, chloroform is infinitely preferable. It is not safe, he said, to give either anæsthetic in dental operations in any other than the prone position.

In concluding, he apologized for the length of his remarks, and said that the interest and importance of the subject were such that he had been led to speak earnestly, and he feared tediously.

After some further remarks from Dr. Craig, in which he complimented the opening paper highly, and advocated the superiority of chloroform over ether, the debate closed.

Dr. H. Brown, of Hustonville, chairman of the Section on Progress of Medicine, Physiology, and Medical Pathology, being unavoidably absent, failed to report. The report will be read at the next meeting as a voluntary paper.

Dr. Carpenter, of Crab Orchard, read a practical and interesting paper on "Structural Lesions of the Arteries," exhibiting afterwards an hypertrophied heart, with extensive calcareous deposits. He also exhibited Thomas' improved pessary.

Dr. Neet exhibited Eyre's splint for tuberculosis of the wrist.

Dr. McKee exhibited Vol. VII of Ziemssen's Cyclopædia.

Dr. McMurtry, of Danville, exhibited Sir John Rose Cormack's "Clinical Studies."

Dr. Harlan, of Danville, presented a negro nine years old, recently recovered from a severe contused wound of the neck, involving the trachea, received some three weeks ago. An iron pin three-fourths of an inch in diameter was forced, by the falling of a heavy frame-work on him, through the right side of the neck near the superior border of the sterno-mastoid muscle, and in the immediate vicinity of the great vessels, into the trachea. The air passed through the external wound with each respiration, and there was dyspnoea with free bloody expectoration. Carbolized lint was applied with adhesive strips, and a valvular opening left for the passage of discharges. The patient progressed very favorably, and made a rapid recovery. The iron pin was exhibited also.

Dr. J. L. Price, of Mercer county, presented a lad nine years old with a large symmetrical swelling of the middle of the right leg. The father stated that he had been vaccinated during the war with impure virus, and the boy had been treated for supposed syphilitic taint, without, however, any improvement. The patient was cachectic in appearance, and the enlargement, which first began to appear some twelve months ago, was firm and hard to the touch.

This case created great interest, and gave rise to a prolonged discussion, in which Drs. Craig, McKee, Dunlap, McMurtry, Neet, and Dr. Gaillard (by request), participated. Various opinions were advanced relative to the cause and nature of the enlargement, and a variety of suggestions made as to the proper treatment. The question of transmission of disease by vaccination was gone over, and the weight of the opinions expressed in regard to this case was opposed to any syphilitic taint.

After a vote of thanks to the Boyle County Medical Society

for an entertainment and other hospitalities, and to the Knights of Pythias, the Association adjourned, to meet in Lancaster on the third Wednesday in April next, the debate to be opened then by Dr. Steele Bailey, of Stanford, on "Hip-Joint Disease, its Diagnosis, Pathology and Treatment."

GEO. T. ERWIN, Permanent Secretary.

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## ORIGINAL CORRESPONDENCE.

"Sit mihi Fas scribere audita."

NEW YORK, February 19, 1877.

*Dr. E. S. Gaillard :*

Dear Doctor,—Thinking many of your readers would like to know what is going on in "Gotham," in a medical way I will, by your permission, write a few lines for your popular and interesting Journal.

The winter lectures at the various colleges will close in a few days, and the spring course will commence. All of the medical colleges have large classes. At Bellevue Hospital College quite a number of old graduates are taking ad eundem degrees.

For a medical student, I can not see that these schools offer superior advantages to those of New Orleans and Louisville; but for the physician, who wishes to see much clinical teaching, I do think the advantages here are superior to any city in America. The clinics here, besides those connected with each college, are numerous and extensive. At the Demilt Dispensary are treated annually about thirty thousand persons. There they have a department for diseases of women, children, eye, ear, throat, chest, skin, etc. New York Eye and Ear Infirmary last year treated over ten thousand patients, Manhattan Eye and Ear, about five thousand. The physicians connected with these institutions are agreeable and obliging gentlemen, and always glad to see their professional brethren.

Much attention is now paid to orthopædic surgery. I recently had the pleasure of visiting the Hospital for the Ruptured and

Crippled, and was very kindly shown through the building by Dr. Knight, who is in charge. It is certainly a great blessing to the poor of such a city as New York to have the privilege of entering such an institution. I also attended a clinic, held by Dr. Knight's assistant. There I saw many interesting cases, among them diseases of hip-joint, talipes, hernia, paralysis, Pott's Disease, ankylosis, etc. One of the most remarkable cases was a little child only a month or two of age, a genuine hermaphrodite. From the situation of the meatus urinarius I should call it a female, but the penis was perfect, except being imperforate.

The Woman's Hospital is well known to many of your readers. The physicians who attend there are Drs. Peaslee, Thomas and Emmet. They are able men, good operators, and very agreeable gentlemen. It was through their kindness that I made frequent visits there during the winter, and witnessed many operations for lacerated perineum and cervix, vesico-vaginal and recto-vaginal fistulæ, and others. Many of Dr. Sims's friends regret that he severed his connection with the Hospital, for it is a great success, and no physician has labored more zealously for it than he; in fact, he was the founder. From all accounts his course was justifiable, for he and all the staff were badly treated. It is unnecessary for me to say a word in his favor, for he is too well known in this country and in Europe. His superior has not yet been produced, and his name will ever live in the hearts of his countrymen. Many poor suffering women, relieved by his skill, are ever ready to open their lips in his praise. He is now absent from the city visiting his old friends and the home of his childhood, which he has not seen for many years. I hope he will enjoy it, but oh! how changed he will find everything.

During the winter I witnessed quite a number of operations, viz., lithotomy, urethral strictures, hæmorrhoids, amputations, trephining, etc., but nothing particularly new concerning them. Much is said about Lister's antiseptic dressing. I have seen it used several times with good results.

Ether is the popular anæsthetic here now. Chloroform is seldom used, except by obstetricians. Its use is prohibited in Bellevue Hospital and other public institutions.



Last week I heard Professor Thomas deliver a lecture on the Management of the Perineum in Labor. I really think such a lecture should be published and sent to every practitioner of medicine. He dwelt upon the importance of preventing extension of the child's head till the entire head is born; for, he maintains, that without this precaution the perineum is almost invariably ruptured. He is a good lecturer and teacher, and always has a crowded room during his hour. After an absence of nearly five months I am quite anxious to return to my home in Alabama, and will probably leave in a few days. I shall soon become a subscriber for your journals.

Respectfully,  
G. THOMAS, M. D.

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KOSSE, TEXAS, 1877.

*Dr. E. S. Gaillard:*

Dear Sir,—I deem it of interest to the Medical Profession to give a brief account of an epidemic summer cholera that has pervaded our section of country for some time past. Many cases have been of a very severe form, some terminating fatally before remedies became available. In some cases there existed premonitions of slight fever, some diarrhœa, with occasional pains in the gastric and abdominal regions; in others the poison or *materies morbi* would suddenly explode with severe abdominal cramps or pains, vomiting and diarrhœa, with such intensity as to exhaust the individual in a few hours. The dejections were of the rice-water character, while the vomiting was of a watery, greenish fluid. One patient had been suffering with remittent fever for three or four days; was prescribed for at 9 A. M.; no symptoms of cholera. At 3 P. M. of same day cholera set in, and patient was in *articulo mortis* when the physician arrived, and he died about 9 P. M. A little negro was attacked about 2 o'clock A. M., passed into collapse in about one hour, and died about four. Many cases might be mentioned, but the above show something of the formidable character of the disease. It was necessary in these severer cases to use the most appropriate remedies heroically, and fortunately they were usually successful. We were forced to treat symptoms at the beginning, and then strike at the

cause of the disease. I regret that better opportunities were not afforded for studying the etiology of this disease in our climate, as we are forced to judge mostly from the effects of the agents used in treatment. Chloroform, laudanum, bismuth, and, later, calomel were used in the initial stage. After these, quinine was usually relied upon in large doses. Patients usually rallied in a few days, very seldom a relapse occurring where the disease was well managed; in fact, I know not of a single instance. I believe the disease, in a majority of instances, was of a malarial origin. In some milder cases it seemed to consist of an acid secretion of the primæ viæ, as alkaline drinks were sufficient. Many other portions of Texas have suffered in a similar manner. We can not ascribe it to atmospheric changes, as the disease appeared when the weather was dry and the temperature uniform, and continued during periods of rain, with very much the same character.

Yours truly,

J. R. TAYLOR, M. D.

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CADIZ, KY., February, 6, 1877.

*Dr. E. S. Gaillard:*

Dear Sir,—I was just in the act of writing an article commending to the Profession the elastic truss, when the "Richmond and Louisville Medical Journal," containing Dr. Gadberry's letter, came to hand. I cheerfully endorse all that the Doctor has said in its favor. My experience, however, has been limited and confined to the use of the truss, manufactured by the Pomeroy Truss Company, New York City, an advertisement of which I found in the "Richmond and Louisville Journal." I can hardly see how an instrument can be made more perfect. It is the only instrument I have ever used that a laboring man can wear with comfort, and at the same time control perfectly the hernia.

Respectfully,

J. W. CRENSHAW, M. D.

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ALLENDALE, ILL., December 20, 1876.

*Dr. E. S. Gaillard:*

Dear Doctor,—At this season of the year, when we are frequently called on to prescribe some of our many remedies for

frosted toes and fingers, allow me to call the attention of the readers of your Journal to one which has been recommended by some of my acquaintances as infallible; and which has not yet, I think, been honored with record. It is this: Cut a hole in a block of ice, and prepare another block that will cover it closely; then take of fresh hog's lard enough to fill the hole when melted; put it into an iron vessel, and heat it as hot as it can be made without igniting, and pour it into the ice, and cover it quickly with block No. 2, so as to freeze it as quickly as possible. After freezing, it is ready for use. The efficiency of the remedy is said to depend upon the time in which the lard can be reduced from the highest to the lowest possible temperature. If it possesses the efficacy claimed for it, it should not be kept secret; its simplicity brings it within the reach of all.

Respectfully yours,

A. J. McINTOSH, M. D.

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LIBERTY, MISSISSIPPI, 1877.

*Dr. E. S. Gaillard:*

Dear Doctor,—I herewith enclose you a sprig of grass taken from the side of a negro child a few days since. The child had been coughing and wheezing for four or five weeks, and about a week ago the mother discovered what she took to be a small boil in the right side, between the fifth and sixth ribs. She was advised to open the rising, which she did by splitting the skin with a large needle, when she saw the point of something. Taking hold of it with her fingers, she extracted the sprig of grass, slip foremost. The wheezing and coughing have ceased and the child is almost as well as ever. Could this slender sprig of grass have worked its way through the lungs and come to the surface so nearly?

Yours truly,

J. W. WEBB, M. D.

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HOLLY HILL, KY., January 1, 1877.

*Dr. E. S. Gaillard:*

Dear Doctor,—Thinking it likely that some of the Profession may not accept Dr. Wallace's definition of natural labor, as quoted by Dr. Hill in the "Richmond and Louisville Medical Journal," Vol. XXII, No. 6, p. 498, I therefore report the fol-

lowing case, being one of the most striking of many that I can authenticate:

Mrs. S., wife of James S., residing on the line of the C. S. railway within two miles of the Tennessee line, gave birth to a son, large and healthy, in the following manner, viz.: After getting supper for a traveller stopping over night, and he retiring, she concluded to make some preparation for the expected "new-comer" (child), and accordingly stepped out into the back yard to get a pot in which to warm some water to wash the child. While out there (a pain coming on), she gave birth to the child. Wrapping it up in her apron, she picked up the pot in one hand and brought it into the house, and proceeded to warm the water and dress the child, after which she retired to bed. Getting up early next morning, she prepared breakfast, at which time she surprised the traveller by presenting the child, remarking: "Here is a "new-comer." Respectfully, W. G. M., M. D.

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SELMA, ALA., February 17, 1877.

*Dr. E. S. Gaillard:*

Dear Doctor,—I notice some defects in my letter on chloroform in the February number; it is Ringer, p. 306, prescribes chloroform in dental operations, not Waring as written. The "second dentition" should be "the second group" of dentition, which I find to be eight teeth, i. e., the four lateral incisors, and the first (4) bicuspid; they nearly always come in a group.

Very truly yours,

BENJ. H. BRIGGS, M. D.

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## CHEMISTRY AND PHARMACY.

"Diruit, œdificat, mutat."—HOR.

**Ustilago Maidis.** By HENRI LEONARD, M. D.—Botanical name, *Ustilago Maidis*; habitat, the United States; local or common names, corn smut, corn ergot; medicinal parts, the fungus, exclusive of chaff. In this drug we hope to find a substitute for ergot. A dozen or more years ago it received a

brief notice as an oxytotic from the German Profession, but for some unaccountable reason it has since fallen into neglect by the regular Profession. The homœopaths do, we believe, dispense the drug in their triturations and dilutions, and have since 1866, when it was first noticed by Prof. E. M. Hale, of their school.

There are many reasons why it is desirable to have some substitute for ergot, and the most prominent one is perhaps the bad keeping qualities of the drug. Again it (ergot) is produced in so small quantities that it allows of "speculation," hence a great variation in price. "Corners" are frequently made upon it. This leads to a "holding over" of the fall crop of the ergot by speculators until the following summer, when it is thrown upon the market in a more or less deteriorated state.

Corn smut, from its universality, does not permit of this speculative handling, and hence it can always be gathered in its most desirable and freshest state, and besides it is much cheaper. Then, too, its keeping qualities are said to be much better than those of the spurred rye.

The literature upon this drug is very meagre. What little analysis there has been given it, shows unquestionably its near chemical relation to ergot. In the "American Journal of Pharmacy" for 1861, Chas. H. Cressler, in an "Inaugural Essay," says that from the examinations he has made, he finds the alkaloid propylamin, one of the active constituents of ergot, in the drug, and proposes this as a source from which to obtain it (propylamin) for commerce. He also says: "Judging from the exact similarity, in sensible properties, of its (*Ustilago*'s) preparations to those of the ergot of rye, I think it might, at least, be supposed to be possessed of similar therapeutic virtues." He sums up the results of his numerous experiments as follows: "This substance (*Ustilago*) contains secalin (an active ingredient of ergot), combined with an acid, a thick viscid oil which throws down a large deposit by standing, a light yellow resin soluble in ether, but insoluble in alcohol, a large amount of pectin, gluten, and a sugar which crystalizes in tufts of needle-shaped crystals from an aqueous solution, and behaves like cane-sugar under Trommer's test."

In the "Annal. Méd. vetr. Belge," and "Rép. de Ph." for 1861, the following account of its action upon pregnant cows is found: "In a cow-house, where cows were fed on Indian corn infested with this parasite (*Ustilago*), eleven of their number aborted in eight days. After their food was changed none of the others threw off their young. The better to be convinced of the oxytocic nature of these mushrooms, the author of the paper, after having dried and pulverized them, administered six drachms to two bitch-dogs with young, which soon caused them to abort also."

In the last edition of "The American Cyclopædia" we find the drug briefly touched upon. It says that it "is dangerous to animals which eat it; it is said that mules fed upon corn thus diseased lose their hoofs, and that it produces abortion in cows; it seems to have properties similar to the ergot of rye."

You are all too familiar with the gross characteristics of the drug to need any such further description of it. Microscopically it is quite a curiosity. The whole mass is found to be made up of spores the 1-2500 of an inch in diameter, held together by a few threads of mycelium, or binding-fibers. The peculiar choking sensation one experiences in crushing a dry fungus near the nose is due to the inhalation of myriads of these microscopical spores. These spores, in a dry state, are seen to be simply little spherical bodies of the size I have indicated. In the recent state, or if water be added to them when dry, they are somewhat larger, and are seen to be *nodular*, and with a little short curved spine (about the 1-8000 of an inch in length), springing from each nodule.

On the single surface presented to view at a single adjustment of the microscope, as many as four, and sometimes five of these nodules have been counted; so it would seem that the entire surface is studded with from twenty to thirty of these little echinated excrescences. The membrane is quite brownish, though semi-transparent, and shows granular matter within. The débris found in the water in which the fungus has been dampened shows granular matter and fatty or oily particles.

The uterine contraction from ergot is tonic; that from *Ustilago* seems to be regularly intermittent. On this ground it will prove

a more serviceable agent in labors than the ergot—that is, if this feature is finally proven to be a characteristic of the action of the drug. It will give less pain to the mother, less danger to her in its administration, and also less danger to the child.—*New Preparations.*

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## REVIEWS AND BIBLIOGRAPHICAL NOTICES.

“Judex damnatur cum nocens absolvitur.”

*A Treatise on the Science and Practice of Midwifery.* By W. S. PLAYFAIR, M. D., F. R. C. P., Professor of Obstetric Medicine in King's College, London; 576 pages, with 160 illustrations. H. C. Lea, Philadelphia.

Not long after the publication of Leishman's *Midwifery*, there comes from abroad a somewhat similar work by Playfair. The comparative merits of these works it is difficult to define. The style of Leishman is certainly more graceful and easy, but it must be admitted that this is attained at the expense of that conciseness and lucidity of description which so eminently characterizes the writings of Playfair. Leishman has apparently entered more into detail, but on close examination it will be found that Playfair has embodied concisely what is described with some prolixity by his predecessor. Leishman has certainly made his work more interesting in one respect by embodying in it a history of midwifery, but whether this is a difference of much importance in works intended to be entirely practical may be safely questioned. The diseases of pregnancy are described by Playfair with great care and fidelity. The reader will find the work especially valuable in this connection. His views in regard to the effects of gestation and parturition upon the development and progress of phthisis are certainly very different from those usually held in America. It is in accordance with the experience of most observers, professional and unprofessional, in this country, that tubercular phthisis seems in its progress to be retarded by gestation, while it is equally in consonance with the views of most American physicians that

the disease is rapidly progressive after parturition. Indeed, many have very unwisely if not culpably advised marriage where tubercular phthisis is incipiently manifest, under the conviction that pregnancy would arrest the disease and afford to the patient a period during which the influences of climate and medicines could be better instituted. Playfair asserts that the disease seems in no respect to be affected either by gestation or parturition. Is not this a practical error?

Very little is said by the author in regard to the effects of pregnancy on other pulmonary diseases, and he has strangely little to offer in regard to the effects of gestation upon the heart. It is so well known, even to those not especially interested in practical obstetrics, that the heart is physiologically hypertrophied during pregnancy and so more prone to permanent tissue changes, that the omission of the author to comment at length upon this subject must be admitted to be a blunder and a serious deficiency in his volume.

His views in regard to the treatment of syphilis in pregnant women are eminently proper, as he claims that pregnancy so far from contra-indicating the use of mercurials constitutes an especial indication for their administration. This view is eminently practical and proper. The author differs widely from American authorities in his views as to the proper treatment of a patient suffering from retro-verted gravid uterus. He clings to the old left lateral posture, and regards it as far superior to the hand and knee position. He claims that in the left lateral posture chloroform can be administered, and that the effects of this drug are of more practical assistance to the operator than any posture that can be selected. Those who have used the knee and hand or knee and chest posture will not consider this teaching of the author judicious or tenable. Where the patient is placed in either of these positions and judicious manipulation by the rectum or vagina or by both is instituted, there are few cases that can not be relieved. The American teaching is essentially that when the practitioner has to choose either posture or chloroform, one to the exclusion of the other, that in opposition to the teachings of Playfair he would surrender the advantages of chloroform and rely upon posture and manipulation.



In all cases of gastrotomy (secondary or primary) for the treatment of extra-uterine pregnancy or any form of abdominal pregnancy, he advises against the removal of the placenta. He regards the admitted dangers of septicæmia when the placenta is thus left as less than the danger of death from hæmorrhage. In tubal pregnancy where rupture of the cyst has occurred, the author recommends immediate gastrotomy, the operator ligating the tube and removing the distal portion with the contained products of conception. Too much attention can not possibly be directed to this view of the author, as if generally adopted it gives to the mother a chance of life, which, if not embraced, condemns her to almost inevitable death. In all cases, therefore, of tubal pregnancy when symptoms of rupture and hæmorrhage supervene, it would seem to be the best practice to perform immediate gastrotomy, to ligate the tube and remove the fœtus and membranes.

The author's physiological logic is, it must be confessed, not such as to infer that the bench and bar lost anything by his entering in preference the medical field. He admits that after double ovariectomy menstruation at times occurs; he admits that ovulation occurs without menstruation; he admits that pregnancy often occurs during the inter-menstrual period; still he clings to the ovular theory of menstruation.

In connection with the disappearance of the cervix uteri within the last two weeks of gestation, and its persistence until that time, the author describes the case of a woman dying in the eighth month of pregnancy, and the distinct appearance of the cervix up to that date; an interesting addition to the testimony on record.

The views of the author in regard to the determining causes of labor are not such as to give satisfaction to the advocates of any of the many theories in this connection. He believes that the real causes of labor are not known. He advocates strongly perineal support during labor, and advises the immediate operation for perineal lacerations. The use of the old conventional binder is advocated by him. Chloroform he gives frequently during the second stage of labor; giving it only during the pains. He does not recognize it as a retarder of labor, or as

having a tendency to induce hæmorrhage. During the first stage of labor he gives chloral in fifteen-grain doses every fifteen or twenty minutes, until somnolency is induced. He is a strenuous advocate for the early use of the forceps; preferring Simpson's forceps to all others. In regard to ergot, he advises its use chiefly after delivery; he seems to ignore its use in those cases of labor in which the tonic contractions of the uterus are so deficient that there is marked retro-cession of the presenting part after each pain. While all obstetricians will agree with the author that the use of ergot is unnecessary when the tonic contractions of the uterus are well marked, there are few who will not (contrary to his advice) recommend its use in those cases where the tonic contractions are so feeble that retro-cession between the pains is distinct.

The author's views in regard to puerperal fever are very decided; there is no ambiguity, and certainly no compromise or reservation connected with them. He terms puerperal fever puerperal septicæmia, and sees nothing in the symptoms manifested different from the ordinary phenomena of septicæmia or pyæmia. His chapter on transfusion is one of the best in the book. His views in regard to management after labor are decidedly antiquated; it is true he does not prescribe the conventional dose of oil and put his patient on low diet and slops, and keep her in a dark room, with perfect quiet, etc., etc.; but he advises that the patient should retain the horizontal position long after labor, and not, as is recommended by many excellent authorities, sit up in bed or in a chair on the fourth or fifth day. Certainly the discharge of the lochia, the circulation in the pelvic vessels, and the recovery of strength are all best promoted by the adoption of the sitting posture as early in the first week as is comfortable to the patient. That involution progresses with greater ease or rapidity while the woman is prone is certainly very doubtful, if not unintelligible.

The recommendations of the author in regard to the management of placenta prævia are so excellent that they are given in full:

¶1. Before the child has reached a viable age, temporize, provided the hæmorrhage be not excessive, until pregnancy has advanced sufficiently to afford a reasonable hope of saving the child. For this purpose the chief indication

is absolute rest in bed, to which other accessory means of preventing hæmorrhage, such as cold, astringents, pessaries, etc., may be added.

"2. In hæmorrhage occurring after the seventh month of utero-gestation, no attempt should be made to prolong the pregnancy.

"3. In all cases in which it can easily be effected, the membranes should be ruptured. By this means uterine contractions are favored, and the bleeding vessels compressed.

"4. If the hæmorrhage be stopped, the case may be left to nature. If flooding continues, and the os be not sufficiently dilated to admit of the labor being readily terminated by turning, the os and the vagina should be carefully plugged, while the uterine contractions are further promoted by abdominal bandages, uterine compression, and ergot. The plug must not be left in beyond a few hours.

"5. If, on removal of the plug, the os be sufficiently expanded and the general condition of the patient be good, the labor may be terminated by turning, the bi-polar method being used if possible. If the os be not open enough, it may be advantageously dilated by a Barnes' bag, which also acts as a plug.

"6. Instead of, or before resorting to turning, the placenta may be separated around the site of its attachment to the cervix. This practice is especially to be preferred when the patient is much exhausted and in a condition unfavorable for bearing the shock of turning."

It is evident that while the teachings of the author are at times questionable, his volume is one of great value, and one to be most highly recommended. It is excellently issued.

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## MISCELLANEOUS.

"Non omnes eadem mirantur ament que."

**Pills of Sulphate of Quinine.**—In a communication to the "American Journal of Pharmacy," Mr. H. P. Reynolds speaks very highly of the following formula for the preparation of quinine pills. He has tested the process for over three months, and during that period had made thousands of pills, which have always given entire satisfaction. He says that the quantities directed are correctly proportioned, and should not be altered. Quinia sulph., gr. 600; acid tartaric, gr. 100; glycerine m. 75. Rub the quinia and acid together in a mortar to a fine powder till no appearance of crystals remains, add the glycerine—just 75 minims, no more, no less—and continue the trituration till the powder becomes adherent, when it should be beaten into proper form for handling and divided into the requisite number of pills. The mass is firm, solid, rolls well, does not set for some hours—is, in fact, a "beautiful mass," and the pills will be

found quite small for their weight, very white if rolled in starch powder, and, however dry or old they may become, they remain perfectly and entirely soluble.—*New Remedies.*

“**Missing Link.**”—The New Year, it seems, is likely to bring with it a gleam of sunshine to Mr. Darwin and his followers, for the “missing link” is at last reported to have been found. The “Sydney Morning Herald” gravely asserts that the Rev. George Brown, a Wesleyan minister, lately returned to Sydney from a year’s residence in the New Britain and New Ireland groups of islands on the east coast of New Guinea, has been told by the natives that a race of men with tails exists at a place called Kalili. These beings are certainly not monkeys, as they build, plant, fight, etc. The tail is hard and inflexible, and before the men can sit down they have to dig a hole in the sand, as they would die at once if the treasured appendage was broken. Tailless children are immediately destroyed, as they would grow up as objects of ridicule. The Rev. Mr. Brown has not yet seen one of these interesting mortals, but the natives have promised to capture a specimen for his inspection. The fortunes of half a dozen members of this tribe would be made if they could only be induced to visit the metropolis and exhibit their novel appendages.

The “Lyon Médical” relates the case of a married woman living in Paris who has just given birth to a triplet, comprising her twenty-second, twenty-third, and twenty-fourth children. This woman, in the course of her married life of nine years, has given birth to twenty-four children, all born three at a time and in perfect health. This remarkable family party consists entirely of girls.

M. Verneuil, in presenting lately to the Société de Chirurgie, in the name of one of his old pupils, Dr. Fontan, a *brochure* on the “Treatment of Hæmorrhoids by Forced Dilatation of the Sphincter Ani,” expressed the opinion that the records contained in this volume, like the facts which M. Verneuil himself has had occasion to collect, are of a nature to suppress henceforth all bloody operations for hæmorrhoids.

## M E D I C A L N E W S .

'Nulla dies sine linea.'

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In the Arctic expedition those who used no alcohol escaped scurvy.—The British Parliament has devoted £2,000 for scientific investigations; the Royal Society is the custodian of this fund.—The School of Medicine in Paris is to be tripled in size.—While all others who work for the city of Louisville, Ky., are well paid, the Health Bill creates a Health Department requiring physicians to serve "without pay." Will any one do this?—Dr. William Grier, U. S. N., has been made chief of the Bureau of Surgery, U. S. N.—One case of ovarian cyst has been successfully treated by Dr. R. Hesse, of Brooklyn, N. Y., by electrolysis.—Dr. Pavy's work on food has just been published in Russia; a great compliment.—Physicians of all countries are now forbidden to practice in France without a Paris diploma.—Hebra, of Vienna, has received the order of the iron crown in acknowledgment of his services.—Health Boards in several cities now require that when any one dies of infectious disease the name of the disease should be stated in the funeral notice and the Public be thus warned from attending; diphtheria is included in this list of diseases.—Turkey has become a member of the Geneva convention. Her medical employees are, however, to wear the crescent and not the Geneva red-cross upon the arm.—At an Irish "wake" of a girl who died of typhus fever every one present contracted the disease.—Mr. Faber's speaking machine is to be introduced into the asylums for the deaf and dumb, that by its study the inmates may be taught to speak.—All who love their Profession will learn with profound regret of the death of Sir William Fergusson; born March 20, 1808, at East Lothian, Scotland, and died at London February 10, 1877. His biography is best read in the annals of conservative surgery for the past half century. He was the most conservative and yet the most brilliant operator of his generation. The British, Scottish, and Irish physicians have for a generation past showered justly-earned honors upon him, and there are

few posts of prominence that he has not held. As operator, teacher, author, and guide, he has long been the pride of British surgery. Most of the prominent medical men of London assembled at the dépôt from which his remains were to be carried to Scotland, and when the train moved off every hat was silently raised, and there was scarcely a dry eye in the assemblage; *sic itur ad astra*.—The distinguished dermatologist, Erasmus Wilson, is to defray the expenses of the removal of "Cleopatra's Needle," that magnificent Egyptian obelisk, from the sands of Egypt to the bank of the Thames, England. Some idea of the cost of this movement may be entertained from the fact of an official announcement that "the British Nation can not afford to pay for the transportation of the needle." This act is a monument as well to the munificence of his Profession as it is to the parsimony of his Nation.—Died, suddenly, at Leeds, Utah, William E. Gibson, brother of Mrs. E. S. Gaillard, son of the late Dr. Charles Bell Gibson, of Richmond, Va., and grandson of Dr. W. E. Gibson, of Maryland, for a long time Professor of Surgery in the University of Pennsylvania.—If any practitioner desiring the aid of a young physician will communicate with the editor of this Journal, he can obtain the services of one who can be recommended without qualification.—Helen Augusta, daughter of Benj. T. and Jane Gaillard Rogers, died at Summerville, S. C., on Friday, Feb. 9, 1877.—Dr. R. A. McLane has taken editorial charge of the "Western Lancet."—Dr. Prokop von Rokitansky, one of the sons of the famous Vienna pathological professor, has been appointed Professor of Medicine at Innsbrück.—Dr. Pollard, of St. Louis, recently committed suicide, according to his own written statement, to solve his doubts in relation to a future state.—We regret to announce the death, on February 19th, of Dr. C. E. Buckingham, Professor of Obstetrics in Harvard University. He took his degree of A. B. at Harvard in 1840, and was graduated from the medical department in 1844.—*Respiration of the Fœtus*.—Dr. Zweifel, in an article in the "Archiv der Gynæcology," states that he has demonstrated the presence of oxyhæmoglobin in the blood of the vessels of the umbilical cord by means of the spectroscope, thus showing that it con-

tains oxygen. In other experiments he opened the gravid uterus, and, on producing asphyxia artificially, observed, after the lapse of a short time, the bright blood of the umbilical vein became dark, taking the precaution of immersing the animal in a bath of common salt. He found that asphyxia was produced in the fœtus, when the supply of air was cut off in the mother, in about the same time as in the newly-born animal.—We have received a pamphlet (republished from the "Indian Medical Gazette") from Surgeon-Major J. B. Hamilton, entitled "Observations on 'Tinning' Cooking Pots in India," in which the dangers of lead-poisoning from the use of cooking utensils whose inner surfaces have been coated with a preparation in which lead is an ingredient, are illustrated.—*Lancet*.—*Polluted Rivers*.—The water supplied by the companies drawing their supplies from the Thames last month was greatly polluted with organic matter, and, according to Dr. Frankland, quite unfit for dietetic purposes even after efficient filtration.—Professor Lister has been elected a Foreign Corresponding Member of the Société de Chirurgie de Paris. He has also been elected a Foreign Associate Fellow of the College of Physicians of Philadelphia.—Dr. Herbert Davies has been appointed medical officer to the Bank of England, in the place of the late Mr. Smee. The selection is in every way judicious.—*Lancet*.

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## EDITORIAL.

"Nullius addictus jurare in verba magistri."—Hoz.

**Brevities.**—The medical colleges of the chief cities have sent out the usual number of graduates this spring. The Northern colleges have sent out as a rule more than the usual number, while at the South the number of graduates has been less. The Centennial attractions have been, as is generally supposed, the cause of this.—The recent editorial on the disassociating of the didactic and licensing powers in medical colleges has

received much favorable comment, but this has invariably come from gentlemen unconnected with medical colleges. College faculties are opposed to such a movement, as it must largely reduce the revenue received from the sale of diplomas. As long as the diplomas of medical institutions are sold, it will be impossible to secure any collegiate support in the effort to establish State Boards of Examiners in each State; a Board before whom all applicants for graduation and all seeking to practice must come for examination. This is unfortunate, but it is natural after all, for when diplomas costing \$1.50 are sold for \$30.00 each, and a college graduates from fifty to one hundred students, the revenue obtained is somewhat too material to expect that the diploma fee shall be abolished, and the amount charged for it transferred to an impartial Medical Examining Board, wholly unconnected with any medical college. This movement, so essential to removing so many of the ills and evils which are undermining the status of American physicians, will never be fostered by medical colleges; it must be pushed forward by the great Body of the Profession. When its success is secured, all of the unfortunate school quarrels as to fees, qualification, the duration of the undergraduate period, will be forever put at rest, and physicians will feel assured that no one can come in competition with them but those who have successfully passed the searching ordeal of an impartial and thorough State Examining Board. It is to be hoped that physicians through journals and societies will press forward this movement, and take no rest until this great desideratum, this great medical essential, has been secured.—A most marvelous resolution has just been passed by the Board of School Commissioners of New York City. They have resolved that the movement proposed by the New York Legislature of appointing medical Inspectors, whose duty it shall be to thoroughly inspect the school-houses of the State, is wholly unnecessary; that the creation of such officers would be a superfluous piece of legislation, expensive to the State and not in any respect needed. If such a resolution had come from the municipal Body of an obscure village, it would be indeed disgraceful to the community originating it; but coming from a



Board charged with the high duties of education, and in the greatest and one of the oldest States in the Union, it may well be said that language is really impotent for the characterizing of such folly and stupidity. It is well known that in almost all of the public-school buildings of this country the faulty architecture, bad ventilation, want of cleanliness, and effective heating apparatus are patent to every intelligent person, and that nothing but fearless exposures in the daily papers of these rank abuses can ever remove them. Add to these dangerous conditions those of basement occupation, overwork, insufficient playground, injudicious punishment, etc., etc., and it is evident that nothing but the fearless supervision and reports of efficient medical inspectors can ever make the system of normal schools physically, mentally, and morally safe and respectable. It is certainly strange that in school boards where medical men are largely represented, this great safeguard is not only suggested but insisted upon. If the public, who are really just and reasonable, were so instructed as to understand the dangers of overcrowding, bad light, defective ventilation, vicious methods of heating, overstrain, exposure to those suffering from epidemic diseases, bad management as to physical recreation, etc., etc., they would not censure but eulogize those who instituted a careful system of school-house inspection.—The metric system does not seem to command the general support of the Profession; *non quia movere* is as popular an aphorism now as it was with the conservatives of the old Roman Empire.—The political excitement has now subsided; the figure-of-8 bandage has been ingeniously applied by the astute doctors who were called upon to prescribe for the patient, the prognosis in regard to whom was so long doubtful; the treatment has been novel and original, and those who practiced it have now completed their labors; the friends, family, and acquaintances no longer hang in eager anxiety over the case, and the readers of this volume, like the rest of their countrymen, can now return to their labors; to their Journal reading, and to their long-suspended habit of remunerating those who labor for them, and who for five months have been forgotten and neglected.

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## ORIGINAL COMMUNICATIONS.

“Qui docet discit.”

ART. I.—*Why Should we Support the Perineum during Labor at all, and Particularly in Primiparæ?* A Means Recommended which, as far as Tested, has never Failed to Prevent Lacerations of the Perineum. By EDWARD B. TURNIPSEED, M. D., Columbia, S. C.; Knight of the Order of St. Anne, Third Class of Russia; Recipient of the Sevastopol and Commemorative Medals, with the Ribbons of the Orders of St. George and St. Andrew respectively attached, etc., etc.

“The value of supporting the perineum, although demonstrated theoretically, has not been proved experimentally; that is, in the only irrefragable manner. But even if it were proved experimentally, so far as the perineum merely was concerned, that is in maintaining its entirety, that would not prove its value on the whole, for there would remain to be investigated the question whether the saving the perineum did or did not increase the number or severity of the injuries of the other parts of the vulvar orifice.”

I quote the above paragraph from the “Obstetrical Journal of Great Britain and Ireland,” January number, 1877, page 646, in an article by J. Matthews Duncan, M. D., “On the Lacerations of the External Genital Organs (except the Hymen) during Labor in Primiparæ,” read to the Obstetrical Society of Edinburgh, December 13th, 1876. This is, by far, the most sensible and instructive article on this subject I have ever seen; sensible, because he acknowledges the utter impotency of the

Profession with the present means employed to prevent these injuries; instructive, because he clearly illustrates by statistics this impotency; and the great need of supplanting the old beaten track by some other preventive more in accordance with the advancement of science.

I hope that I may be fully understood in my suggestions to the Profession, which I am induced to make from the infallible remedy or preventive I have resorted to for some years in my practice. Although my favorite branch is surgery proper, yet in the course of my professional labors I have had to deliver a great many women; and notwithstanding I am satisfied in my own mind of the errors of the Profession, as well as the means that will prevent, to an extraordinary extent, these terrible misfortunes, yet as I approach near this work I almost falter with diffidence in due deference to those who have not only made a specialty of this branch in large cities, but have grown with the frost of age distinguished by their wonderful achievements.

I will first briefly notice the points of greatest resistance offered to the expulsive efforts of nature. The transversi perinei muscles arise from the tuberosity of the ischium on each side, pass diagonally upward toward the raphé and are inserted into the constrictor vaginæ. The sphincter ani arises posteriorly in the superficial fascia around the coccyx and from the apex of that bone, and is inserted anteriorly into the tendinous centre of the perineum and in the raphé of the integument. Levator ani, with its numerous points of origin from the bones of the pelvis, is inserted into the side of the vagina. These muscles, with the superficial and deep perineal fasciæ, form about all the resistance. My conviction, from experience, is that *very nearly all the resistance is from the transversi perinei and constrictor vaginæ*; and as the axis of the pelvis is below this point, of course it necessarily follows that the head of the child is forced in the direction of the anus and apex of the coccyx, and hence the posterior wall of the vagina is forced down so low that a cul-de-sac is formed, which, if resisted by outside pressure, either forces the head to describe the arc of a circle to reach the vulvar opening or retards labor at the expense of

the poor woman's strength ; or the posterior vaginal wall or the vulvar opening is torn, and coupled with these misfortunes we may have laceration of the perineum or of the air cells with emphysema of the face, the neck and of the superior part of the chest ; by the last of which accidents M. Depaul reports the death of one woman. The most fatal of all the accidents that may occur, however, from these obstructions is rupture of the uterus.

I avoid this tedious labor and its frequently terrible results, simply by passing two or more fingers of the right hand into the anus, applying them firmly against the superior wall of the rectum and pressing with great force perpendicularly upward, and if the head has already formed the cul-de-sac, diagonally backward and upward. Should these efforts not move the head of the child, I place two or more fingers of the left hand within the vulva at the fourchette, pressing them between the head of the child and the above-cited parts, and using a lever force by forcing the hand downward in the direction of the raphé of the perineum, and I have more than once heard the popping noise produced by the sudden movement of the head from the cul-de-sac, and it was at once delivered. If the head of the child should prove too large to pass without injury to the soft parts after fully testing the mode recommended by me, I do not hesitate to use the forceps, compressing and lifting the head perpendicularly until the vulva is passed, thus going through the same mechanism as heretofore stated when using the hands alone.

During a practice of some twenty years I have only one case to report of laceration, and that was slight tearing of the fourchette, which healed without an operation. Hippocrates tells nothing in regard to support of the perineum during labor, but we must conclude that these lacerations of the soft parts were not uncommon in his practice, from the fact that his advice after labor was that the woman should keep her legs crossed, this being doubtless the means used to produce union of the injured parts (French translation of works of Hippocrates, volume IV, page 364). It seems that about all the good such men have transmitted to us has been by sheer experience, and it can

scarcely be doubted that his experience had taught him that the injuries were increased instead of diminished under manual resistance.

It seems to have become the custom in the Profession to attribute all the difficulties and accidents during the second stage of labor in primiparæ to the resistance or the unyielding condition of the perineum. My opinion is that the greatest amount of pressure received by the perineum from the head of the child is invariably below the transversi perinei muscles, and consequently the more yielding that part of the perineum is the greater the difficulties presented; the cul-de-sac becoming deeper and deeper until labor ceases by exhaustion of the woman; or there is rupture of the perineum or any or all of the accidents heretofore alluded to. It is often that coupled with this idea of unyielding condition of the perineum we are taught by authors that women marrying late in life are more liable to these accidents. Madame Lachapelle says (translation): "They have from all time pressed the opinion (regné) on this point. The proportion (meaning of difficult labors in primiparæ) I dare to assure is perfectly equal. If four out of six have, amongst the young primiparæ, an easy labor, four out of six, amongst the older, give birth with promptitude and facility." Translation: "The age of the woman has not on the duration of labor, even when she is a primiparæ, the grievous influence that is accorded to it by the most of obstetricians" ("Cazeaux Accouchements," page 429).

*Conclusions.*—All this reckoning of opinions and results, it would seem, must convince any unbiased mind that there is something radically wrong in the management of these cases. Why is it that there are no logical deductions from the opinions of the Profession at large? All seem to agree that pressure on the perineum should be made, but no one has given a rational reason for so doing; in fact, those who have taken the trouble to collect statistics are in doubt not only in regard to any benefits derived, but assert that it is even likely that by keeping intact the perineum, the other soft parts are injured to a greater extent. Viewing the interspace between the posterior wall of the vagina and the rectum perpendicularly when the woman is

on her back, we have an isosceles triangle, two sides of which of course must be equal; during labor if the head of the child is not directed to the vulvar opening by the means I have recommended, the superior side of this triangle is obliterated by virtue of its being forced against the posterior side and the base, thus forming a cul-de-sac, which cul-de-sac obstructs Nature's efforts, and in consequence of the greatest amount of resistance being above a line drawn horizontally across the centre of the part of the head presenting, must either be relieved by the means I resort to or the woman is liable to any or all the misfortunes that have occurred in these cases. I do not interdict pressure upon the perineum, and always avail myself of this means of preventing injury to the soft parts when endangered, until by the modus operandi heretofore described, I can effect the necessary changes in the direction of the head of the child, never failing to apply the force below the transversi perinei and constrictor vaginæ.

## SUPPLEMENT.

Since writing the above article, and after it had been forwarded to the editor, my attention has been directed to an article on this subject by Dr. William Goodell, of Philadelphia, read before the Philadelphia County Medical Society January 26 and September 14, 1870, and recommended for publication, which article appeared in the "American Journal of the Medical Sciences" in the January number for 1871. I hereby disclaim having had any knowledge of this article whatever, having neither seen it nor any allusion to it until as above stated. The Doctor certainly deserves great credit for the learning and research he has given evidence of in the authorities cited in reaching the literature of "supporting the perineum" in labor. It will be seen, however, in perusing his publication, that we differ very materially in our methods of force applied to the superior or anterior portion of the rectum. I was told by a physician of large experience in obstetrical practice that he had repeatedly tried Dr. Goodell's method and had abandoned it. The following is his method, as given in his own language: "Whenever, therefore, it seems proper to aid nature,

insert one or two fingers of the left hand into the rectum, the woman lying on her left side, with her knees well drawn up and separated by a pillow, and hook up and pull forward the sphincter ani toward the pubes. The thumb of the same hand is then to be placed upon the foetal head, scrupulously avoiding all contact with the fourchette. The right hand need not remain idle; it assists the thumb in making the head hug the pubes, or in retarding its advance; after a pain it presses back the head from the perineum, and thus represses reflex uterine action; it restrains the movements of the woman; it pushes up the corrugated scalp, so that no folds shall remain beneath the sharp edge of the perineum to increase the circumference of the child's head; finally, it supports the emerging head and body, causing them to describe the curve of Carus."

I place the woman on her back, believing this is by far the best position for both patient and physician. I assume the erect position on her right, having her close to the edge of the bed; insert the index and middle finger of the right hand into the rectum, and direct the force as explained above upward and backward toward the pubes. This is generally all that is necessary; but when the constrictor vaginæ is so unyielding as to make it necessary, I introduce two or more fingers of the left hand between the head of the child and the fourchette, using this hand as vectis or lever with more of the lifting force, done of course with great care, or else the fourchette would be torn. Only ambidexters, or those termed left-handed persons, could have much power with the left hand in performing an office where the amount of power necessary in these cases is such as to require the right hand; and in addition to the above reasons in sustaining the position given the woman, I have never thought a woman in labor had the same expulsive power when placed on either side that she possesses when on her back. Of the muscles of the body, those encasing the anterior portions of the abdomen are those brought most forcibly into action in the expulsive efforts; the tendency of which action is to throw the whole body forward, which is of course done at the expense of the spinal column and the muscles thereof; whereas, with the woman on her back we have the additional counter influence

produced by the weight of the superior portion of the body under the laws of gravitation. This, I think, is evidenced by the woman complaining more of her back paining her when lying during labor on either side. The cry is, "support my back."

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ART. II—*Cause of the Periodicity of Mode of Action of the Agent producing Intermittent and Remittent Fevers—with Notes of Interesting Cases.* [Read before the Christian County (Ky.) Medical Society, 1876.] By J. P. THOMAS, M. D., PEMBROKE, KY.

The subject for discussion to-day is one of great importance to the members of this Society and all practicing in malarious districts; one, to the study of which we can not devote too much attention, though one upon which so much laborious investigation has been expended during so long a period of time; a study of these diseases reaching back to the earliest period of medicine.

Notwithstanding it is a subject apparently "thread-bare," yet our daily experience enables us to observe some peculiar mode of action of that protean agent called malaria that has escaped the observation of others. I will therefore present some views of the nature of the infection, together with my theory of it; not the cause or causes, but of the mode by which such cause produces the phenomena witnessed in a case of intermittent fever.

My opportunities for making these observations have been ample, for, as you all know, this district of country is the home of malaria; being as completely saturated with miasm as any other in the United States; as the sweeping epidemic of chills and fevers last autumn fully demonstrated. I suppose, also, that we have as many complications to contend with in treatment as our fellow-practitioners anywhere; and my experience has taught me that the chief danger to life and the difficulties of treatment consist in the complications.

As is well known, the origin of or the materies morbi pro-



ducing these protean maladies has been charged to a so-called malaria, or to miasmatic effluvia, or poison emanating from and the product of vegetable decomposition; by some, to a cryptogamous growth; by others, to a *contagium vivum*; and to animalculæ suspended in the atmosphere by many.

Dr. Salisbury's theory was rather startling at first sight, and to many seemed to be the true solution of the mystery. The palmella, specially the white and brick-colored, had often been observed in malarious districts, and no where else, and especially during epidemics of intermittents; always in the by-roads and damp places protected from the rays of the sun. But after performing the same experiments as those performed by Dr. Salisbury, I failed to produce an intermittent at will, even in a malarious district, as did the Doctor in a locality as exempt from chills as the granite hills of New Hampshire, and where a chill had, till then, never been known. I was as unsuccessful in preventing a relapse by the destruction of this cryptogamic growth or mould with lime, or straw, as recommended by him, after the chills had been arrested by an antidote. Like the oft quoted ghost of Banquo, they "would not down."

Miasm originally, in its broadest sense, meant any poison floating or suspended in the atmosphere which could produce disease by being inhaled into the air passages. It is well known, however, that these vegetable and animal organisms possess the power of multiplication *ad infinitum*, either by propagation, fermentation or some chemical process after a lodgment in the human organism. Consequently, let the specific agent or cause be what it may, investigation, so far, has failed to demonstrate even its nature, and it may be said truly that it has only in this direction but just begun. Though the question of vegetable or animal origin of the organisms producing malaria (nearly all believe they are vegetable) has never been decided, I am forced to the conclusion, in our present state of knowledge, that they are vegetable, and that the morbid agent is a ferment, a yeast; and although introduced into the organism by inhalation from the atmosphere, they must undergo a chemical fermentation or change in the blood that increases their power of multiplication and growth. I think this poison is a

sort of yeast, and increases in quantity by fermentative growth within the organism until the nervous system becomes overpowered by its accumulation in the great nerve centres, when nature revolts and makes an effort at cure by elimination; and a shock, a depression, or what is called a chill, is the result.

We know that the smallest particle of yeast placed in a quantity of molasses and water as a menstruum, will in a short time fill the vessel with yeast; so in the case of this fermentative poison the blood is the molasses and water, or the menstruum. The vital forces are depressed in proportion to the amount of poison generated. If the poison is not in overwhelming quantity, as in the pernicious form, nature will overcome the excess of poison, unaided, for the time being, and afford temporary relief to the organism; and reaction from this depression is established; but often this reaction, the result of Nature's effort at relief, is so great at times that there is danger to the organism from this cause alone; but in the majority of cases she accomplishes her object (elimination), and a profuse diaphoresis is established, and through her great emunctory (the skin) the excess of poison is thrown off, and the organism gradually assumes, apparently, its normal condition. But this is only apparent, because she has only been able to expel the excess, and consequently there still remains enough of this yeast to form the germ of reproduction; so in twenty-four or forty-eight hours, as the case may be, longer or shorter, the poison is reproduced in sufficient quantity to result in another revolt; owing in this respect, i. e., as to time of recurrence, to the amount of the germ left by the efforts of the system at elimination, or to the propagating powers of the menstruum, the blood.

If we admit the hypothesis that the propagation of the poison is by a fermentation within the organism, then I think we can account for the periodicity of intermittents as well as the remissions in remittents. The poison, without an antidote, will regularly reproduce itself in sufficient quantities to result in a paroxysm (as I believe) by fermentative growth, during which expulsion of the poison takes place by sweating, and through the other emunctories of the system, and enough of it disposed of in this way to relieve the organism for the time. But the

blood being the menstruum for its propagation, in twenty-four or forty-eight hours or longer, sufficient is accumulated to produce another revolt in the system. As we know in some instances, it requires a longer period of fermentation or incubation to produce the same result, owing either to the greater virulence of the morbid cause in the one case than in the other, or to the more favorable condition of the menstruum, or which is the same thing, the increased susceptibility of the patient to the influence of the poison; so also when there is an antidote administered and Nature assisted, the poison is in many cases only partially, or at least not wholly destroyed or completely neutralized; but by the aid given Nature, with the use of the antidote, it then requires of course a longer period of development to accommodate the morbid agent in sufficient quantity to produce a paroxysm; and often we see the patient remaining, apparently, well and free from its influence for days; usually from seven to nine, but often from fourteen to twenty-one days or longer, when by this fermentative process or development the quantity of the toxic agent has increased to an amount sufficient to excite another revolution in the conservative forces of the organism, and as a consequence there is a combat between these forces and the poison.

In other words, the so-called chill is nothing more nor less than an effort of the vital power of the system to free itself from the agent in the blood that is threatening to overpower it by its depressing effect upon the nerve centres; therefore the three stages of an intermittent are conservative, and not the disease *per se*. This reasoning is applicable to remittents, because they are produced by the same cause, the poison only acting more continuously.

Notwithstanding I append to this paper some clinical notes of a few cases in practice, its chief object is to present my theory, or at least hypothesis, of the cause of the periodicity of intermittents, as no theory or suggestion on this point has as yet been advanced, so far as my knowledge extends; and having entertained this view as the only solution of the question for a number of years, I offer it (with hesitation) to the Profession for what it is worth, and only with the hope that it may be

the means of bringing into this field abler investigators and deeper thinkers, and in this way lead to a true and correct solution of the mystery of the periodicity of intermittents; such a knowledge, no one will deny, would clear the way for more enlightened treatment and management of a class of diseases more numerous, including their complications, than all others combined. Hertz, who is the latest authority on malarial diseases, says: "We have no insight into the causes producing the periodicity of intermittents."

Upon this hypothesis of germ growth within the organism, I think we can not only account for their periodicity, but for the continuance of this poison in the system, after the removal of the patient far beyond malarial influence; so far as the atmosphere as a carrier is concerned, at least; i. e., when removed from a known malarial district into one where it is entirely unknown; one that has always been free from malaria.

I am convinced that the poison does not travel very far, but is always generated on the spot where the infection begins; that is, by the agency of the wind. If it is carried far it must be within the organism, possibly in a latent state.

I make no pretensions to a knowledge of the origin of the poison, or from what source it emanates; it may be the spores of the palmella, as Dr. Salisbury thinks ("Amer. Jour. Medical Sciences," 1869), though Dr. Harkness states ("Boston Med. and Surgical Journal," same year,) "that he found the palmella spores in the snow and at the summit of the highest alps, and says "they may very readily become mixed with the saliva and urine from without, at the same time having nothing to do with malaria." But whatever it be, it has this power of propagation by aid of the blood, and that the latter must be in a sufficiently abnormal condition, i. e., in a susceptible condition from the various causes predisposing to disease, as a sudden cooling of the body after overheating, continued loss of sleep, overmental or physical exercise, "catching cold," etc., etc., to be a suitable *menstruūm* for its development. If not so, why so many in the midst of an endemic of intermittent fever that escape? They are all alike exposed.

I do not believe that malaria is necessarily the product of

either vegetable or animal decomposition, or that marshy swamps and boggy lands are special generators of it, for we see many districts of country surrounded and interspersed with swamp and marsh lands, and yet not a case of malarial disease. On the other hand, we find many localities high and dry, and without a marsh or swamp for miles, where miasmatic diseases abound, and often in the most malignant form. Such is the fact in respect to this section. They have occurred in the oases of the Sahara desert.

If we attribute the development of this peculiar poison to telluric influences, what produces the numerous sporadic cases we meet with in midwinter? If they are cases of previous infection during the endemic season, then there must be a latency in the morbid cause which enables it to hibernate; this, few will admit, as almost all writers and observers say the poison generally acts promptly, and the stage of incubation is short. So far as my observation extends, all such cases were poisoned during the endemic season, and had taken an antidote, which, as I believe, had so far neutralized the poison as to leave only an infinitesimal germ (in many cases) which of course required a longer time for propagation and development of an amount sufficient to produce a revolt in the organism. It is true we meet with cases, where there seems to have been a latent condition of the poison, where the patient had been the subject of both forms of malarial fever, and sometimes of the most pernicious character, and had been apparently cured for a length of time and then removed to a country where the disease is unknown, there never having been a case seen or heard of; but after a residence of a few weeks he is attacked with remittent or intermittent fever, and after its apparently yielding to treatment, in a week or two, there is a so-called relapse. Now is this a new infection? Of course not, for the atmosphere is pure, and especially free from malaria. Some would say, all I suppose, that it was latent. Well, what aroused it into action? Why did it not remain latent? The surroundings of the patient are all favorable to its repose. I am answered that some undue exposure, fatigue, etc., was the exciting cause. This is partially correct secondarily, but primarily, it is owing not to a want of

action, or latency on the part of the poison or inactive germ, but to the unsuitable condition of the blood to act as a menstruum for its development; i. e., in cases where the patient, in the first place, has taken an antidote sufficient to partially neutralize the poison and arrest the paroxysms, and has been under the influence of favorable hygienic and prophylactic treatment, or some condition favorable to the building up of the blood to a normal standard. The germ may still be present in the system, not being entirely destroyed, yet the blood has been rendered unfit for a menstruum, and consequently unfavorable for its propagation. But, on the other hand, when prophylaxis and health-conducive circumstances are removed, and the patient catches cold, or is overworked in body or mind, or both, or from any cause predisposing to disease of any kind, and there is a particle of the germ left in the organism, then deterioration of the blood occurs, and with its aid as a menstruum the remaining germ develops by fermentative growth to a quantity sufficient to produce what is termed a relapse. I have seen many such cases; but Hertz gives a good illustration of this as occurring in his own person, which I will quote in conclusion of this part of the paper.

"Although during the year of my residence in Holland I had suffered much from malarial diseases, at one time having an eight-day attack of continued fever, yet I had been free from it for several months, when I took up my abode in a part of Germany that was entirely free from malaria, and in which no case of intermittent fever had *ever* (italics mine) occurred. After about four weeks I was seized with an intermittent attack, which yielded to quinia, but which recurred some weeks later, though in a milder form."

It is supposable that he had kept himself under a prophylaxis (as he like myself considers this more imperative and beneficial in malarial diseases than in almost any class of affections) sufficient to keep the poison in abeyance until the blood was improved to such an extent as to postpone the development of the poison until, in fact, he thought it destroyed; then after the second arrest of the paroxysms, in a climate entirely free from the poison, it again for the third time developed itself, yet Hertz calls it latency.

With this brief account of my idea of the *modus operandi* of the insidious cause (familiarily known as malaria) of intermittent and remittent fever, I will speak of the treatment:

What is the rational plan of reinforcing nature in such an unequal strife, and giving her aid at the proper time and in the proper way? If this hypothesis can be admitted to the dignity of a theory, and considered as a correct one, then there is certainly less of the disturbing element in the system immediately after the termination of Nature's struggle, which we know has ended when the skin begins to respond to her efforts at elimination; consequently, this is the supreme moment when our aid should be given, and the antidote be brought to bear upon the remaining germs that are left uneliminated by the organism, after the resistance maintained by the vital forces. 1. Because, as before stated, the enemy is weaker, and more easily combated than he will be a few hours afterwards; for the reason that he is reinforcing himself constantly by self-propagation, and consequently is rapidly multiplying. 2. As a natural consequence, it requires a less amount of the antidote to neutralize a smaller quantity of the poison than it does a larger. 3. It gives the antidote more time for complete absorption, which, according to my observation, requires at least six hours when introduced into a stomach with good digestive powers, and any antidote given nearer the period for a paroxysm than six hours certainly fails to prevent it or benefit the patient, as far as that paroxysm is concerned; but I think I have seen it benefit the next one.

Lastly, and by far the most important as to results, it gives a better guarantee of the patient's safety in pernicious cases especially. I have long entertained this theory as to the action of the morbid agent in the production of malarial fevers, and have constantly practiced upon these principles; always ordering the antidote, no matter what weapon selected from the armory of the *materia medica*, to be administered immediately after the fall of the temperature and at the beginning of the third stage of an intermittent, without regard to any stage of a remittent; and have never had cause to change my tactics in this respect.

These fevers were without doubt more than endemic in this region last fall; it was a huge epidemic. I suppose I treated over 250 cases of the two forms of the malady. Having met with an unusual number of complicated cases, together with "miasmatic whims," as Dr. J. G. Rogers terms them, I propose to present for the consideration of the Society a few of them, with the treatment and its results.

These cases seemed to assume almost every conceivable form, and clothe themselves in every imaginable garb, calculated to mislead the non-observant and puzzle even the most vigilant practitioner, and if detected in their fraud, and their true character discovered, they were often clothed in such formidable armor as to intimidate the physician and produce a feeling of helpless weakness.

CASE I was a negro boy, aged eighteen years; had been the subject of chills for several months; under domestic treatment by his employer, when suddenly, while in a paroxysm, he was stricken with a sort of coma, only his eyes were wide open, and there was no stertorous breathing, but a constant stare at vacancy; the finger placed on the eyeball produced no protective movement of the lid; the strongest ammonia to the nose failed to produce any excitation of the olfactory nerves; sinapisms, with hot applications to spine and extremities, which were cold, yielded a like result; a fly blister to the whole of the occipital region and cervical spine was similarly nil. Pulse full and labored, indicative of great cerebral trouble, congestive in character, yet head was pleasantly cool; perfect inability to swallow; deafness, with complete aphonia. Quinine in thirty-grain doses administered by enema, and in three-grain doses hypodermically, at intervals of three hours, produced no effect. Patient remained in this condition from Tuesday, 10 o'clock A. M., until Friday, 11 P. M., without additional treatment, except twenty grains of hydr. chlo. mit., upon tongue, and several enemas of "soap-suds" and ol. ricini, when, on account of continued fullness of pulse and extreme tenacity of life, I decided to try bloodletting; accordingly, sixteen to twenty ounces of blood were taken from the arm, soon after which he exhibited decided repugnance to the fumes of ammonia, and for the first



time winked his eyelids, and even rotated the balls, apparently following the movements of his mother, as if he recognized her; but after hours of waiting, his bowels having acted freely, and not making any effort at speech, seeming all the time entirely destitute of the sense of hearing, the entire scalp was shaven and enveloped in a cap of blistering ointment. After this, at 10 A. M., Saturday, I left him, with instructions to send for me if the blister aroused him to consciousness, if not, I would not visit him again, thinking it useless. On next day, Sunday, at 11 A. M., I was summoned to see him, with the message: "Gran can talk and knows everybody." On arrival I found the patient perfectly rational and begging for food. A dose of oil and turpentine was prescribed, and in due time produced several "tarry" discharges, after which he slept for the first time since his attack. With quinia and iron as a tonic he rapidly recovered, and is now a stout, healthy man.

No period of life is exempt. I treated infants only one week old, and had patients from one to eighty years of age. The majority of the children, from two months to five years of age, were the subjects of spasm. In many cases the chill would announce itself by a spasm; every spasm witnessed was tonic in character. I have never seen a case of clonic spasm from malaria; it must be very rare that one of this character is observed; there seems to be no relaxation of the muscular system until the spasm subsides entirely.

This form of intermittent is not uncommon, however, in childhood; it has been of frequent occurrence in children of the above ages in my practice for a number of years; during the last epidemic about six out of every ten had spasms as a complication. Though very alarming to the parents, I can not consider them as dangerous, having seen only one death from this cause, and that in a case that had had several spasms before, and the circumstances were such that a physician's attendance could not be procured until too late.

The treatment in these cases consisted in the administration of Hoffman's anodyne, in from ten to forty-drop doses, according to age, every fifteen or twenty minutes, with cold to the head, and hot hip baths during the spasm; sol. quinine in spts.

æther nit., immediately after its subsidence, paying no attention to the fever in the administration of quinia in this combination, always, however, keeping up the cold applications to head, and sponging the body with cold water during the hot stage. I would here remark, by way of parenthesis, that recently I noticed an article in some medical journal in which the writer claimed spts. nit. as a new solvent for quinia; and would simply state that I have used it, as the best solvent I could find for this alkaloid for over fifteen years; but never until recently employed it as a solvent of quinia for hypodermic medication; but after trying several formulæ published, and finding all of them too irritating, producing abscess, sores, or hard knots under the skin, I concluded to try spirits æther nit. fff, and now use this formula:

**R**—Sulph. Quiniæ, grs. ʒi;  
Spts. Nitre Dulc, fff. ʒi;  
Mix and filter.

One ounce will dissolve readily fifty grains; in fact one drachm can be held in solution by one ounce; but the above gives a fraction over three grains to every thirty drops; the prescription containing sixteen doses of thirty drops each. I have used this formula upon my own person very recently, producing only a temporary erythema of the skin; it is less painful than the formulæ containing sulph. acid and carbolic acid.

In all stubborn or chronic cases, a "bark jacket" was put on the little patient, with the following prescription thrice daily at meals:

**R**—Compound Tr. Cinchonæ, ʒj;  
Fowler's Solution, ʒj;  
Sulph. Cinchonidiæ, ʒss;  
Aquæ Puræ, ʒij;  
Mix. Sig. one teaspoonful ter die at meals.

There were a number of cases complicated with a sort of "cholera infantum" that seemed to be a part of the disease; for the reason, when the chill was arrested by an antidote, the diarrhœa would cease and digestion return; but as the discharges from the bowels were generally rapidly debilitating and of very offensive odor, I usually prescribed the following as

an addition to the antidote, which invariably controlled the diarrhœa :

℞—Salicin, ℥ss ;  
 Tannin, ℥ij ;  
 Glycerinæ, } ãã ℥jss ;  
 Aquæ, }  
 Carbolic Acid, gtts xvj ;  
 Mix. Sig. a teaspoonful

every three or four hours, according to the urgency of the symptoms. After some considerable experience in the use of salicin in diarrhœas in general, I think I can fully endorse all Dr. J. B. Mattison, of New York, claims for it in the "Bi-Weekly;" having, I suppose, read his paper of 1873, but I do not remember how I came to use it, but have relied on it principally for over two years, even in the diarrhœa of typhoid fever, after bismuth, tr. iodine, and other vaunted remedies had failed.

In this epidemic there were among my cases fifteen complicated with severe acute dysentery, which resisted the ipecac treatment as well as my favorite prescription in this disease—a combination of opium, ipecac and nitrate of silver, with enemas of peach-leaf tea and laudanum; but when quinia was added they yielded readily.

In quite a number of cases the only symptom of the first stage was some form of neuralgia, followed by fever, the neuralgia disappearing with the subsidence of the fever; in some cases before any treatment had been instituted; in others, there was only the neuralgia, without the fever, but coming on at a stated period, lasting about as long as a chill and fever. Treatment: Hydrochlorate of ammonia, bro. camphor in aqua camphor, with quinia and hypodermic morphia if necessary.

Some few cases with persistent and troublesome diarrhœa; in all such cases, the addition of salicin, with or without tannin, invariably controlled the bowel trouble; occasionally, when the fetor was considerable, a few drops of carbolic acid were added.

As I believe splenitis, resulting in suppuration, is of very rare occurrence, I will briefly present the history of a case occurring during this same epidemic of malarial fever. Dr.

Flint says it is extremely rare, and that he has no knowledge of it. In an extensive practice of twenty years this is the only case I have seen.

Mr. I. T. Steger, aged twenty-two years. Had been suffering for a whole season with intermittent fever of the tertian type; sometimes confined to his bed; at others would be able to attend to his business; gradually growing weaker, until his entire system seemed to be undermined; his spleen had been for some time enlarged, having "ague cake," when the symptoms of acute inflammation of the spleen set in, with fever of a remittent type; there was a throbbing, deep-seated pain constantly complained of in the left hypochondrium, with extreme tenderness on pressure over the region of the spleen; the organ continuing to enlarge and extend towards the right side, until the swelling, apparently, extended very nearly to the border of the left lobe of the liver.

The patient had been under treatment for about two months when first seen by me in consultation with my friend, Dr. E. A. Wilson, of Garnettsburg, Ky., by whom he had been ably and skillfully treated previous to my being called in consultation, and from whom I received the above history of the case. The patient was greatly emaciated, drenching his body and bed linen with colliquative sweats day and night; debility of course extreme; spleen enormously enlarged; palpation revealed supuration fully developed, forming a very large abscess, accompanied with hectic, with some pyæmic symptoms. The opening of the abscess was at once decided on, in consultation, as being imperatively demanded, and as the only hope for the patient, and it but a faint one, which operation was performed by me at Dr. W.'s request, with a large-sized abscess lancet, making a deep and free incision; when through a canula five ordinary saucers of unhealthy, very fetid pus were drawn off; after which the discharge was checked by the introduction of a tent, but not until a weak solution of carbolic acid had been injected. Ordered him frequently sponged with a strong solution of alum and quinia in whisky, a general sponge bath. He was placed on a saturated solution of quinia, with excess of sulph. acid, every two hours. In forty-eight hours the sweating had nearly ceased, when he was ordered comp. tinct. cin-

chona, and a generous use of wine, with beef tea, eggs, etc., for about eight days, when citrate iron and quinia with cod-liver oil were substituted. The patient gradually improved from the time of the operation. I should have stated that each day up to the sixth from one to three saucers full of pus were drawn off from the spleen. By the use of the carbolized injection, the fetor diminished, and the pus became more laudable, but continued to discharge more or less for two weeks after the abscess was opened.

Under a tonic, alterative, and general sustaining treatment the patient continued to improve from November 21 to January 10. About this time symptoms of "gravel" or urethral trouble set up, suffering greatly with pain on voiding urine, with almost a constant desire to do so, and intense tenesmus of large bowel. He received the usual treatment for these symptoms for ten days without benefit; continuing to grow worse, he was brought to me on the 20th of January. After careful inquiry into the history of these latter complications and the treatment pursued since I last saw the case, finding it had been rational as to symptoms but unsuccessful, I came to the conclusion there was some mechanical obstruction to the passage of urine extraneous to the bladder or urethra, or that it was reflex in character, and as there was difficulty in the passage of the fæces as well as the urine, my attention was directed to the rectum. After dilatation of the sphincter ani sufficient to admit two fingers, I discovered by touch a hard unfluctuating tumor protruding, as it seemed, from the anterior wall of the rectum, situated at the base of the bladder, producing pressure on its neck, and almost occluding the calibre of the rectum. As there had been a small admixture of matter resembling pus discharged with the fæces on several occasions, I was inclined to diagnose another abscess. Consequently I was content to wait for fluctuation, addressing the treatment to a building up of the system with tonics and alteratives, keeping the bowels open by enemias of warm water, and the bladder from distension by an occasional introduction of the catheter, which was accompanied with considerable difficulty.

After several days of this treatment and no decided improvement, still no fluctuation or softening of the tumor, I resolved

to paint it with comp. tinct. iodine by means of an anal speculum, and increased the alterative to twenty grains iod. potass with stillingia and cinchona thrice daily. The constant drink of the patient was water saturated with bi-tartrate potass as a laxative to the bowels. In a few days the urgency and distressing tenesmus of the bowel gradually grew less, and the patient could empty the bladder with comparative ease. On February 8, I found the tumor considerably diminished in size by absorption or resolution; continued the iodide in ten-grain doses, combined with fluid extract stillingia and "Huxham's tincture of cinchona." After this date he continued to improve rapidly, and on the 20th of February returned to his home entirely well.

Had three cases of so-called "malarial hæmaturia," which I think a misnomer, but for the want of a better I use it. These cases proved very unyielding to treatment, but finally recovered by the use of quinia, oils of turpentine and erigeron, more especially the liberal administration of the tinct. ferri chlo. In conclusion, I will detail the history of a case occurring in a son of one of my tenants, and which, I think, exhibited the most "whimsical freak" of this subtle agent. This case might be properly classed with the last three, though there was no hæmorrhage from the bladder, bowels, or skin. The patient, aged fifteen years, had always been healthy up to August, 1875, when he became a subject of chronic intermittent fever, which could be only temporarily arrested by treatment; once for over three weeks he was free from chills; returning, however, as soon as the antidote was discontinued. He continued to have chills, notwithstanding a variety of remedies were tried, including cold shower-baths, up to February 10, 1876. Having had a chill on the day before at 11 o'clock A. M., at the same hour on the 10th symptoms of a chill set in, accompanied with an alarming epistaxis. Being summoned promptly, with a "nasal powder douche" filled with ferric alum and tannin, I injected the nares freely. This producing no effect in checking the hæmorrhage, per sulph. ferri was tried with the same result. Hypodermic injections of ergotine and the fluid extract of ergot were persistently tried, with ice water to the head and cervical spine, plugging the anterior nares, together with Dr. Brown-Séquard's plan of pressure upon the superior maxillary artery,

were tried without affecting the flow of blood in the least; the hæmorrhage continued through the three stages of the intermittent, but at the expiration of the third stage it ceased entirely. Having no idea that the chill had any connection with the hæmorrhage, except so far as the poisoning and impoverishing of the blood and the consequent relaxing effect upon the tissues in general were concerned in producing a hæmorrhagic diathesis, I only ordered quinia in five-grain doses every two hours, but owing to the obstinacy of the patient and indulgence of the parents only one dose was taken; consequently the next day at 11 o'clock A. M. the epistaxis and the cold stage commenced as a simultaneous attack, as on the previous day; the hæmorrhage resisted all the means used before with increased doses of ergot, when the posterior nares were plugged by means of a violin string and a piece of sponge attached to one end of it, also the anterior nares, when of course the hæmorrhage was arrested. By way of experiment, on this evening no antidote of any kind was given. At 7 o'clock the next morning the plugs were removed. No hæmorrhage took place until about 12 M., when the same phenomena as on the two preceding days occurred, cold stage and profuse hæmorrhage from the nose; but this time the posterior plugs were immediately introduced and the bleeding arrested. The plugs were not removed until the end of the second day, the patient being almost exsanguined. He was given tinct. ferri chlo. with quinia in full doses for two days, when, contrary to instructions, the treatment was neglected. He continued to improve, however, up to the evening of the seventh day, when another paroxysm, accompanied as before by epistaxis, occurred. After the arrest of the hæmorrhage, the parents being now very much alarmed for his safety, the treatment, consisting of saturated solution of quinia, with sulph. acid in excess, carb. iron, and arsenious acid in pill, was promptly and faithfully pursued. The patient improved gradually, and is now in robust health, never having had a chill since, now over a year.

With regard to my treatment of remittents, a few remarks only are necessary. I invariably commence the treatment with a full dose of morphia combined with spirits nitre dulc, say for an adult from  $\frac{1}{2}$  to  $\frac{1}{4}$  grain of the former, and  $\mathfrak{z}$ ij of the latter,

never but one dose; in an hour the head, back, and bone-aches generally have disappeared, and usually the skin acting freely; but whether this be the case or not, and without regard to the fever, I begin the quinia in from five to ten-grain doses every two hours until forty grains have been taken, when the disease is as a rule cured. This, with or without a mercurial, is all that simple, uncomplicated remittent fever requires.

But, unfortunately, we meet with cases so distinct from the simple form of the disease as to not only require a different course of treatment, but so stubborn as to tax all our skill to combat them. I had during this epidemic many cases of typho-malarial (so-called), very protracted, and in which quinia was of no value; only by the assistance given Nature in her efforts at elimination could these cases be managed. All the secretory and emunctory organs were kept as active as possible by alteratives, diuretics, and especially diaphoretics. I found turpentine filling more of these indications than any one remedy. After the organism has been thus assisted and cleared of the poison, I then found quinia with specially the tincture of the chloride of iron indicated and of decided benefit.

I will give in this connection a few prescriptions that I have used for twenty years with success in the majority of cases:

℞—Sulph. Quinæ, ℥j;  
 Pil. Hydrarg., ℥ss;  
 Ol. Peper Nig., ℥ss;  
 Syrup, q s;  
 M. ft. Pil. No. xxiv.

The above pill will rarely fail to cure those cases complicated with inactive liver. They are administered as though they were all quinia, and on the arrest of a paroxysm, one ter die. They should be accompanied with some diuretic, as bicarb. potassa and spta. nitre, when indicated. A favorite alterative and cathartic pill is:

℞—Leptandrin, ℥j;  
 Podophyllin, grs. viij;  
 Compound Ext. Colocynth, ℥ij;  
 Hydrarg. Chl. Mit., ℥ss;  
 Ext. Taraxacum, q s;  
 M. ft. Pil. No. xxx.



My experience with the sulph. cinchonidia has been quite extensive; and I am convinced it is equal in the majority of cases to quinia, and in some cases, where there is an idiosyncrasy against the latter, is preferable to this great boon to every resident of a malarial district; and should be included by all such in their list of Divine blessings.

With reference to the idiosyncrasies of this drug, I have met with a few very singular examples. I have a young lady patient who can not take the smallest dose of quinia without producing a violent attack of neuralgia of the stomach; this is not imaginary, for so I considered it, and to test its truth gave it under another name, and so disguised as not to be detected by taste or any of the senses; and an attack of neuralgia of the stomach was the consequence. She can take the cinchonidia with impunity, and it has all the therapeutic action desired or that quinia can produce.

Another lady can not take it (quinia) on account of its violent emetic properties; in her case, no matter in what form or vehicle administered, as soon as it comes in contact with the gastric mucous membrane emesis is at once set up. Another peculiarity of this lady's stomach is that fifteen grains of ipecac in half a glass of warm water will immediately check nausea and vomiting after the usual remedies for irritability of stomach have failed.

A case treated over fifteen years ago comes to my mind in this connection, and as it was the most masked and remarkable case I ever treated I will present it from memory:

The patient was a very feeble infant four months old; had been feeble from birth; had a prematurely old look; poorly nourished; weight at this age only four pounds; had been under the constant medical care of the family physician (an excellent practitioner) when he refused to visit it any longer, telling the parents "it was useless and only an expense to them, and that death was certain in a very short time, and would be a mercy." All this was true at the time, except that death was certain to occur soon; and this he had every reason to believe was true; but as will be seen, that Lilliputian baby is at this present writing a very strong healthy boy, aged about seventeen

years; large for his age; a clever, sprightly fellow, and the namesake of the writer; but, as is sometimes the case, this mark of respect was not the only reward that the doctor received. After the little patient was abandoned by his physician I was sent for to see the case; "drowning men catch at straws."

The following history was given me by the mother: At birth he was several minutes "still-born;" i. e., did not breathe; weight two pounds. When only a week old he was attacked with colic, so called by the doctor; and I think the most extensive colic I have witnessed before or since. Tympanitic distension commenced in the bowels and extended to the thorax, pressing upon the lungs; impeding respiration, distending the ribs, producing so much pressure on the large bloodvessels as to swell the carotids; inject and "pop" the eyes; protrude the membranes covering the brain, through the fontanelle (the bones of the cranium not being closed), forming a rather large pulsating tumor of "the mole;" each attack accompanied by a high grade of fever. These paroxysms usually lasted about six hours. They had never succeeded during "a spell" in procuring a stool by even very stimulating enemas. I suspected a stricture, intussusception, and every other horrible complication; not being as old then as now; but suffice it to say, by the introduction of an elastic bougie during a paroxysm, I discovered a stricture about six inches above the anus. After considerable manipulation, I succeeded in passing it through and beyond the stricture. I then substituted a catheter of larger size and was again successful in passing through the stricture; when a continuous current of gas escaped through the instrument until all distension had disappeared, and the abdominal parietes were as soft and flaccid as could be desired. I do not wish to be understood as intimating that the gas extended into the thorax, but by its pressure it forced up all the organs of that cavity and expanded the ribs. After prescribing a mild laxative for the bowels, thinking as did Dr. — the case a hopeless one, I merely instructed the mother, should the distension again occur, to inform me and I would repeat the operation of catheterizing the rectum. The next day I was again summoned with the message, "the baby is swelled up again and thought to be

dying." I found the situation the same as on the day before; the suffering seemed to be beyond the endurance of a stouter person. The catheter was again introduced, and this time I had placed in exact range of the open end of the instrument, at two feet distance, a lighted candle; it was repeatedly extinguished by the current of sulphuretted hydrogen. A few hours after, when there was no distension, I again introduced the catheter and found no impediment. There was no stricture during a remission. It was evident that the stricture was temporary and the result of the distension.

On the third day the usual summons arrived, "To come and use the instrument," when for the first time, I thought of periodicity, noted the time and found it was about the same hour each day, viz., 11 o'clock A. M. On inquiry I was informed that the paroxysm had recurred about this hour from the first. I should have stated that the mother informed me before the use of the catheter, that at the end of about six hours the bowel would expel the gas and the fever would subside. I now instructed the mother how to introduce the catheter, and had at once prepared a "bark jacket;" after sponging the body and legs with a saturated solution of quinia in whisky I put the jacket on the patient, with instructions to keep up the sponging. He was then fed on cinchona bark tea and fresh cow's milk. Had but four more paroxysms, and the last two much milder. The jacket was kept on him for six months. He grew apace, and now is the boy I before described as Joseph Thomas Allen. I have since seen many cases of comparatively mild malarial colic. I have under treatment at present a case of chronic intermittent, with enlarged spleen and liver and general cachexia. After having chills every other day for three months, with cramps of the posterior muscles of the legs and intense hyperæsthesia of the whole cutaneous surface at each paroxysm, now every third day he has a paroxysm, consisting of a general twitching of the muscles over the entire body and limbs, which continues about three hours. He has no cold stage, hot stage or sweating stage; has no fever at any time, only this jerking of the muscular system. In the intermissions he is apparently well, except general anæmic debility.

I should have stated, when speaking of the administration of the remedy on the fall of the temperature after a paroxysm, that many contend there is no fall of temperature below normal in the cold stage. This is certainly an error.

## SUPPLEMENT.

As corroborative evidence of the correctness of the fermentative germ growth, and, of course, going to prove the theory of the cause of the periodicity of intermittents as given in this paper, we have only to consider the known anti-fermentative and antiseptic properties of the family of antiperiodics from the king (quinia) down to the humblest member of the class.

Quinia is one of the best antiseptics we have. I find very few of this class a better dressing for old suppurating wounds and old ulcers.

Salicin is another, and I think its beneficial effects in diarrhoeas are due to this property, partly at least, as all antiperiodics are to some extent tonic and stimulant.

Arsenic is a valuable antiseptic. The hypophosphites possess this property, and are anti-fermentative in an eminent degree.

I have found spider's web a good antiseptic, and have cured chronic intermittents with it when other remedies had failed.

Having experimented with a few of the leading antiperiodics, to a very limited extent, however, with the view of ascertaining their anti-fermentative powers, I will present the results of these experiments, with the hope that they may induce other observers to further investigation in this direction :

In one pint of apple cider, after fermentation was fully established and with considerable progress made towards the formation of vinegar, I dissolved ten grains of sulph. quinia ; in another pint, twenty grains hyposulphite of soda ; in another,  $\mathfrak{ss}$  salicin. In six hours fermentation had partially ceased in the first ; very nearly ceased in the second ; but only slightly retarded in the last. To the first, forty grains were added ; to the second,  $\mathfrak{3j}$  ; to the third,  $\mathfrak{3ss}$ . At the end of eight hours, in the first, there was entire neutralization, with complete arrest of the fermentative process, and an excess of quinia at the bottom of the bottle ; in the second, at the expiration of two hours,

all fermentation had ceased; in the third there was slight fermentative action at the expiration of nine hours. Some experiments as to their antiseptic powers upon urine are recorded as follows:

Early morning urine saturated with quinia was not preserved from decomposition over twenty hours when voided from a patient who had taken no quinia internally; but the urine voided by a patient fully cinchonised remained fresh; i. e., free from decomposition several days. The same test with salicin was attended apparently with more success outside the body, the urine was preserved as voided over forty-eight hours; but its effects upon the renal secretion within the organism were not so decided as those of quinia.

According to these limited experiments, the hyposulphites have a more decided antiseptic and anti-fermentative power than either of the above, but must be administered in much larger doses, and requiring a larger quantity for neutralization when added to prevent decomposition outside the organism.

The results obtained with carbolic acid and salicylic acid were similar to those obtained by Professor Kolbe, of Leipzig, the latter preventing in urine the formation of ammonia or any decomposition for about seventy-two hours, while of the former it required a larger quantity to effect the same result; but from my experiments it was found that quinia, salicin, sulphites, carbolic acid, and salicylic acid, were capable of arresting fermentation in any menstruum planted with yeast cells. There was no observation made with carbolic acid upon urine voided by a patient while taking the acid, and in but one case with salicylic acid; this was a patient laboring under an attack of acute rheumatism. With the exception of slight deposits of the phosphates, there was no decomposition or change for over three days in this patient's urine.

I am fully aware of the fact that a great many experiments have been made by a number of observers with salicylic and carbolic acids upon milk, urine, etc., etc., but so far as my knowledge extends but few with quinia, salicin, and the standard antiperiodics.

I am inclined to think that salicylic acid may prove an excel-

lent antiperiodic, and from its antipyretic and antiseptic properties must prove a valuable aid in the treatment of typhoid fever. I have had no experience with it in the treatment of either typhoid or intermittent fever, but should an opportunity occur, I have concluded to try it in the former disease and advise others to experiment freely and publish their results.

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## ECLECTIC DEPARTMENT.

"Carpere et colligere."

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ART. I.—*Address in Obstetrics and Diseases of Women and Children.* [Delivered before the American Medical Association June 8, 1876.] By SAMUEL C. BUSEY, M. D., Washington, D. C.

*Mr. President and Gentlemen,*—The written law of this Association limits this address to the discussion of the "advances and discoveries of the past year" in obstetric, gynecic and pediatric medicine.

However willing or competent I might be to fill the measure of this requirement, the time allowed me would necessarily preclude a critical examination of all the contributions to this department. Nor would this be desirable, since many of them are mere novelties of little or no value, or hasty promulgations of immatured opinions and illogical conclusions.

The recent literature of this department of medicine may, not inaptly, be compared to a sheaf containing many heads of wheat; some with each capsule filled with a perfectly developed, matured, and ripened grain, rich in the elements essential to its reproduction in kind. Other heads contain light and shrivelled grains, the yield of an impoverished or illy-cultivated soil, which, while not wholly valueless, yet nevertheless are far below the proper standard in weight and measure, not unfit for ordinary consumption, but unworthy of preservation, and progressively degenerating by reproduction. Lastly, other heads there are with empty capsules, destitute of a single fecundated

ovum, containing nothing but chaff, mere abortions *ab initio*. To winnow out the chaff would perhaps be but a work of time, intelligently and assiduously employed; but to glean from the entire mass only the perfect grains, and to estimate the value of each, demands a degree of accuracy only to be acquired by great experience and an impartial judgment. Even more is requisite to correctly determine what are the "advances and discoveries" in these branches of medical science, for every such claim must be submitted to the ruthless arbitrament of time, and be verified by the repeated observations of the skilled specialist.

Obstetricians are proverbially slow either to seek or to accept new things. The maxim of Blundell even yet impresses the medical mind, and the great master, though retired from active pursuits, is yet in spirit present at every accouchement, sounding the tocsin of alarm, "meddlesome midwifery is bad;" and this, while it inspires some with awe, lest by some inadvertence they transgress the canons prescribed by him and others of equal renown, has, fortunately for suffering women, encouraged others to seek, through careful study and more careful observation, in this devious path of scientific research, additional aids, by which the sphere of active interference in the management of abnormal labors may be extended, the suffering of parturition diminished, and its dangers averted.

To this end Goodell\* has devised a method of utilizing power in the delivery of "head-last" labors with safety to both mother and child by rendering effective, through conjoint supra-pubic propulsion, and "movements of unremitting traction" on the foetal neck, the minimum of traction force. This mode† of delivery necessarily depends on "the tensile strength of an infant's neck," and the operator must accept the alternative of "killing in the attempt to save rather than of killing by cowardly inaction."‡ The force employed should not exceed the minimum

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\* Medical Times, volume v, page 385. Originality denied by Wilson, Am. Jour. Obs., April, 1876, page 99. Prof. Isaac E. Taylor says: "I must say that for fifteen years I have adopted this double method of treatment in these cases." Reprint from Trans. New York Academy of Medicine, 1875, page 24.

† Ibid, page 387.

‡ Ibid, page 387.

of power requisite for decollation. The spinal column may snap under a weight of 105 pounds, the soft parts yielding under a weight of 120 pounds.

Duncan\* concludes, from his recent experiments upon the fresh cadavers of adult foetus, that the power admissible in extraction by the feet can not safely exceed the force of 100 pounds, which is adverse to podalic version in narrow pelves. But in original breech presentations and footlings, the alternative is not, as a rule, between podalic and forcep extraction, for the procedure relates exclusively to the completion of delivery by traction on the neck of a foetus partially extruded. And, surely, in view of the mortality of breech presentations, even in the practice of specialists of unrivalled dexterity, the *ipsi dixit* of a by-gone period should not deter the obstetrician from efforts to employ this power to the best mechanical advantage. The method of Goodell is an advance in the right direction, and the hope may be cherished that we may hereafter "approach a case of head-last labor with an assurance of success such as we never had before."

Not less valuable and original is the procedure of the late Dr. John S. Parry,† in which the hand is employed "to flex the head when partially extended in all its presentations, to transform occipito-posterior into occipito-anterior positions, and to change presentations of the face with the chin behind into those of the vertex with the occiput in front." These manipulations, doubtless more easily demonstrated in the lecture-room than executed on the living subject, supply aids for the conversion of some abnormal labors into natural ones, facilitate the application of the forceps in certain cases, and expedite delivery in difficult cases of craniotomy. Dr. Parry enjoins "absolute certainty of diagnosis," only to be secured by the "introduction of the whole hand into the vagina"—a resource which should never be omitted in case of doubt. More recently Penrose‡ has suggested a method of hastening delivery in mento-anterior positions of the face, by establishing a force of artificial resistance

\* British Medical Journal, volume ii, 1874, page 763.

† American Journal of Obstetrics, vol. viii, p. 138.

‡ Obs. Jour. Great Britain and Ireland, vol. iv, p. 1, supplement.



to the posterior cheek of the fœtus, whereby rotation of the chin is promoted.

Dr. George Johnston's\* successful application of the forceps to cases of undilated but dilatable os uteri is a practical negation of another of the traditional canons, and constitutes an epoch in the history of obstetrics. He adapts such interference to cases "of early rupture of the membranes" and escape of the "liquor amnii before dilatation of the os;" to cases where the membranes are entire, and the head has descended on the cervix without the intervention of a bag of waters, "and expanding it, thereby pressing as injuriously upon it as if the liquor amnii had escaped;" to cases complicated with prolapse of the funis; and to cases of partial placenta prævia. This operation is perhaps inadmissible in cases where the extent of dilatation has not reached two-fifths (one and five-eighths inch), but is an encouraging resource whether the head is above or within the brim, or has descended into the cavity of the pelvis, and is not less illustrative of the life-saving power of the instrument, than of its value in shortening the duration of labor. But while thus the capacity of the forceps as a tractor is being extended, its double lever power is being discarded. Only recently Duncan,† in an elaborate essay, which has been commended by Keiller,‡ Macdonald, Simpson, Young, Bruce, and others, has, with his usual vigor and directness, portrayed the dangers of the "pendulum movement of the midwifery forceps," and insisted that it, like other honored relics of the past, should be dismissed from service.

The fact can not escape your observation that these innovations, born of thoughtful study, have emanated from men of large experience and unsurpassed dexterity, and who have been favored with unusual advantages, and a sound and intuitive judgment. Such advantages do not come to every accoucheur, but all can emulate their example and profit by their triumphs.

Among the mechanical aids recently devised, Dr. Poulet§

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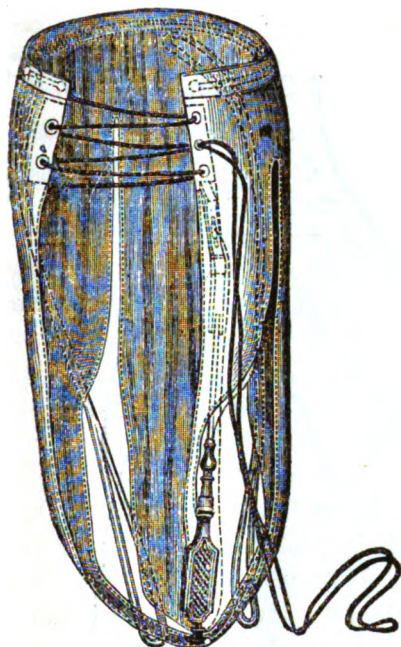
\* Obs. Jour. Great Britain and Ireland, vol. ii, p. 807; also vol. iii, p. 115.

† Edinburgh Med. Jour., Feb., 1876, p. 683. ‡ Ibid, March, 1876, p. 847.

§ Lyon Medical, Nov. 18 and May 2, 1875, tome xix, pp. 5, 12.

has projected an apparatus denominated "The Sericeps," for which he claims advantages, in certain cases of dystocia, superior to the "steel of Chamberlen" (see figure 1).

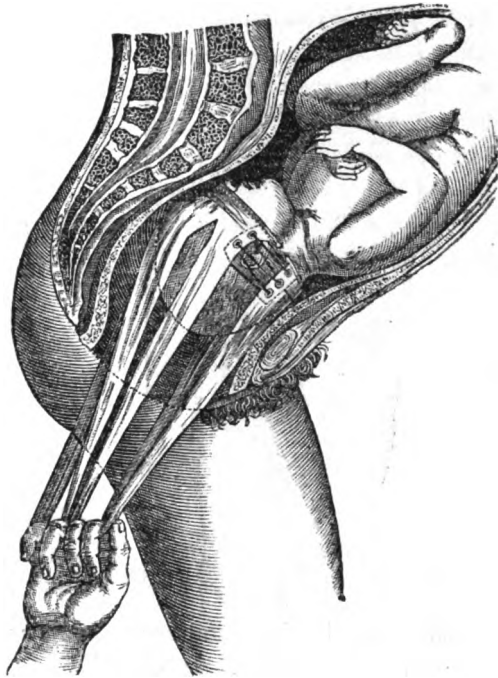
FIGURE 1.



This new device is made of a seamless material, woven double, having the maximum of solidity. It consists, 1st, of a transverse band intended to be spread around the foetal head, its two extremities being connected by cords of silk laced through eyelets. These cords are loose when the band is being adjusted, and when drawn should close the transverse band around the cranial ovoid along its sub-occipito-malar circle. 2d, of four ribbons inserted along the entire inferior border of this band, and united at the other extremities, two by two, forming two handles, by which traction is made. The apparatus is adjusted by means of three arms introduced between the uterus and foetal head superposed one upon the other, in their sheaths formed by the ribbons, and when carried up to the promontory of the sacrum are separated, the posterior branch remaining in position, and "the other two by a movement of rotation are

carried along the sides of the head until they meet in front above the arch of the pubis, when the cords are drawn, the metal arms" removed, and extraction begun by traction upon the ribbon handles, as represented in figure 2.

FIGURE 2.



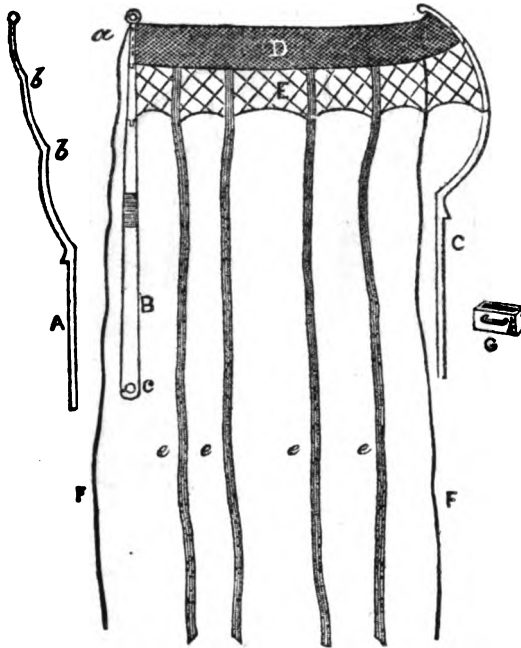
If the circle has been placed sufficiently high upon the ovoid, it grasps a zone of smaller diameters than the central, so that, the material being inelastic when traction is made, "it can not descend until the cranial ovoid is drawn before it." If carried up to the chin or neck of the child, the circle is closed, and gentle traction upon the ribbon handles adjusts the band to the cranial ovoid.

Dr. Poulet claims "that in all cases requiring energetic traction, particularly in the superior strait," this instrument will diminish the mortality of children, while better protecting the soft parts of the mother, and insists that its superiority over the forceps consists in the inappreciable volume added to the child's head; its easy application to cases of long and painful labor;

its ready adaptation to the curves of the maternal parts; the pliability of the ribbons, which free the soft parts from violent pressure; the absence of localized compression of the brain and of any imprint upon the head; its affording means of prehension without lateral pressure; the firmness of the grasp which never slips; the increased range permitted to the movements of rotation, and its harmlessness, however long permitted to remain in position; thus in all of its actions resembling "physiological labor." It is also more easily and certainly applied in the rare cases of decapitation, affords greater opportunity for the operation of perforation, and contributes valuable aid in evacuating the cranial cavity after perforation.

The inventor refers to Mauriceau's idea of a sort of sling or

FIGURE 3.

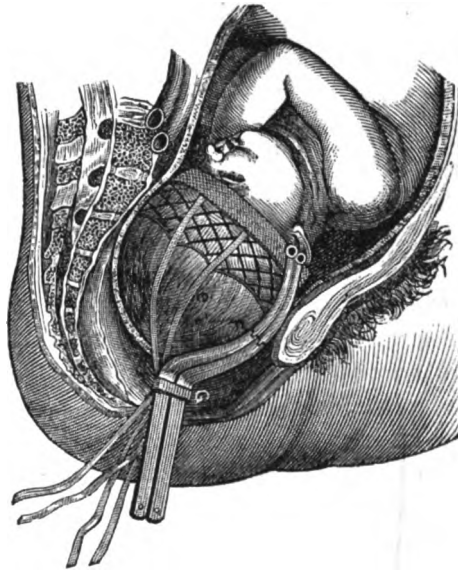


bandage, which was never applied; to Arnaud's description of a cap of thread to be adjusted to the head after decapitation; and to Mead's handle or golf of soft material, to be inserted with a whalebone between the chin and chest; which Smellie tried to use, but finally abandoned; and concludes his review with the

assertion "that at the present day there exists no pliable means capable of taking hold of the head when engaged in the pelvis, and of exercising upon it sufficient traction to complete labor." To this, however, I must demur.

The merit and originality of this invention belong to an American physician. As long ago as 1851, Dr. John Evans, of Chicago, published\* a description of his "Obstetrical Extractor," and he had previously reported, in the Transactions of this Association for 1850, five cases in which he had successfully applied the apparatus. Subsequently, in 1852,† he published another series of twelve cases, some of which were in consultation with Professor N. S. Davis. An examination of figures 3 and 4 will establish the priority of Dr. Evans' claim to originality.

FIGURE 4.



Nor is this all. The descriptions of the two inventions, one in the English, the other in the French language, are so nearly identical that it is not easy to believe the latter could have been written without previous knowledge and examination of the

\* Northwestern Med. and Surg. Jour., 1850-51, p. 53.

† Ibid, 1851-52, p. 40.

former, yet the latter was submitted to the Surgical Society of Lyons, and referred to a committee of distinguished physicians, as an original description of a new instrument.

The genius of our French inventor has found further opportunity for development in an attempt to utilize and regulate mechanical traction by adapting the principle of the "windlass or capstan" to extraction, thus substituting, it is claimed, "a sustained and graduated mechanical force for the irregular muscular efforts of the operator." Dr. Poulet concedes the original idea to his compeer Joulin, claiming only to have transferred the point of support from the perineum to the tuber ischii, which, he maintains, will bear the pressure of the traction force without injury.

This apparatus, figure 5, is composed of three parts:

A. A pelvic arch *a, b, c, d, e*; a branch *e, f*; and a canula *f, g*, with a straight screw.

*B* shows the tractor disjointed at *e* and *f* small enough to be carried in the pocket.

*C* shows the joint *o*, where each handle of the ordinary forceps is pierced for the insertion of the cords of traction.\*

Figure 6 "shows the tractor drawing the forceps, the head being in the superior strait. The dotted lines show the position of the instrument towards the end of labor, the forceps being brought to the front ready to be detached."

The inventor claims to have realized the following conditions:

"True and uniformly sustained traction," by making the pelvis of the woman the point of support.

Greater opportunity for making traction "in the various directions useful in the different stages of labor."

Increased facility for the application of force without restraining the movements and position of the lower limbs.

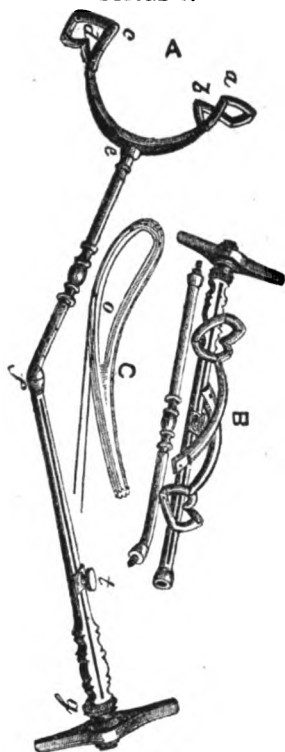
Obtaining support from the ischii without pain, and with-

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\* "The pelvic arc terminates in two quadrangular buckles, covered with caoutchouc, and bent to form cups for the reception of the ischii. The branch *e, f* is straight to *f*, and terminates at *e* by a solid screw uniting the two parts of the arc. The canula *f, g* contains a screw moved by a transverse handle, which moves the wedge *t*. It is to this the handles of the cords which draw the forceps, or the inferior handles of the sericeps, are attached."

out interfering with the use of the cords, or "forceps, or delivery by the hand."

FIGURE 5.



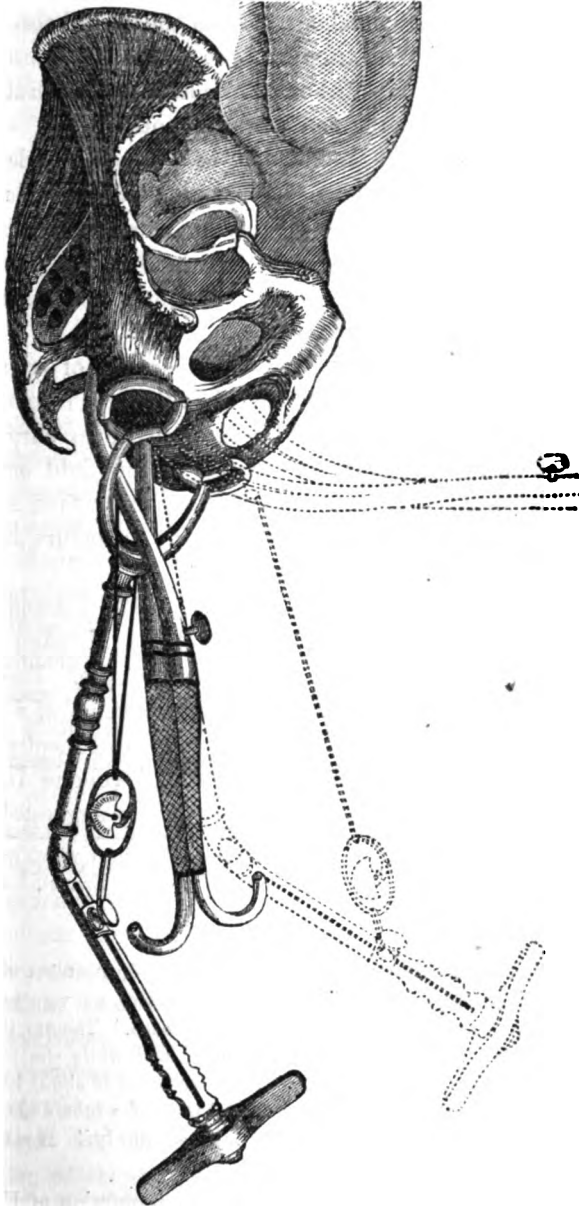
These conditions, the author claims, present advantages superior to Chassagny's apparatus, which derived its point of support from the knees; to Tarnier's "tackle and pulley," which has for its point of resistance a neighboring plank; to Hamon's apparatus, which is supported by two crutches resting on the genito-crural folds of the patient; to Pros' invention, for which the point of resistance "was a wooden frame placed under the seat of the patient;" or to Joulin's "aid forceps," which rest upon the soft parts of the perineum. Its practical merits can not, however, be established by its comparative advantages over all previous devices to multiply force. It is questionable whether such multipliers of force can be utilized in dragging a fœtus through the bony channel without serious injury to both mother and child, or be made a substitute for the traction and compression powers of the

forceps.

In such case, the power driving the foetal head onward, and the power dragging it forward through the pelvic cavity, together with the counter force acting upon the ischial tuberosities, would be expended upon the framework of the maternal passage, for the true pelvis would present, at its superior strait or within its cavity, the obstacle to delivery, and at the same time, at the termini of the transverse and shortest diameter of the outlet, the points of counter-resistance. The forces of traction and counter-resistance would necessarily be always equal, and though acting in opposite directions—the first through the wedge-like power of the foetal head, and the latter upon the tuber ischii, transmitted along the ischial rami—would be ex-

pended upon the pelvic synchondroses, perhaps not often disturb-

FIGURE 6.



ing these attachments, but certainly subjecting them to double



the force required in forceps extraction. Hence, apart from the fact that automatic movements can not intelligently supply the muscular power and manual dexterity of the skilled obstetrician, it seems essential that all traction force, by whatever mechanical instrument supplied, must be free from and independent of any counter-pressure upon the pelvis of the mother.

The discussion on the employment of the perchloride of iron in post-partum hæmorrhage has vindicated its value as a styptic,\* and established its efficacy in those emergencies in which all things else seem to fail; but the fact remains undisturbed, that complete and persistent uterine contraction is the one thing which assures hæmostasis.

Closely allied to this subject is the operation of transfusion. The recent successful employment of milk by Professor T. G. Thomas,† while it presents nothing new, either in surgical execution, or in the nature or preparation of the fluid employed, is yet in its mere success a contribution to science, and adds assurance of the ultimate acceptance of the procedure as an imperative recourse in needful cases.

The transfusion of milk was first successfully accomplished by Hodder ("London Practitioner, volume X, page 14), in 1850, in two of three cases of cholera collapse. Previously, however, Donné had injected milk into the veins of dogs and rabbits without injury to the animals; and subsequently (1854) Herapath ("Association Medical Journal," volume II, 1854, page 795), following Richardson's‡ previously suggested treat-

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\* "It is in itself no styptic, and only coagulates the blood, which rapidly decomposes, and becomes the source of septic infection." Emmet, Amer. Jour. Obs., April, 1876, p. 156.

† Amer. Jour. Med. Sci., vol. lxxi, p. 66.

"A young and healthy cow was driven into the yard, a pitcher with gauze tied over its top was placed in a bucket of warm water, the vein was opened and the cow milked at the moment the fluid was needed." Thomas, *Ibid.*, p. 66.

"I ordered a cow to be driven up to the shed, and while she was being milked into a bowl (the temperature of which was raised to about 100° Fahr.) through gauze, I opened a vein in the arm and inserted a tube, and then filled my syringe (also previously warmed) and injected slowly." Hodder, Lond. Prac., vol. x, p. 15.

‡ Assoc. Med. Jour., vol. ii, 1854, p. 764. Also, transfusion of blood into cellular tissue, by Nicaise, Phila. Med. Times, April 29, 1876, p. 371.

ment of cholera collapse, "by the artificial production of peritoneal or cellular dropsy," advocated injections of milk, or of milk and water, into the peritoneal cavity, cellular tissue, or venous system in similar conditions. Waggstaffe (*"Obstetrical Journal of Great Britain and Ireland,"* volume II, page 549), in 1872, made two unsuccessful attempts, one with condensed milk in a case of "extensive hæmorrhage" following amputation of both legs below the knee; the other with condensed milk and defibrinated blood; and Howe's (*"New York Medical Journal,"* volume XXI, page 506) experiment with goat's milk in 1874, in a case of tubercular disease proved equally unavailing (Howe has three times transfused milk).

As yet the elevation of temperature, which is one of the most constant and perhaps the most important phenomenon following transfusion, has not been explained. In Waggstaffe's case it rose  $2.8^{\circ}$  in three hours (taken in the vagina), and in Thomas's case it rose in one hour to  $104^{\circ}$ . This pyrexia has been attributed to an extra absorption of the products of tissue change; to absorption of pus from the wound; to accumulation of blood in the portal system; to the introduction of a different sort of blood, or of a fluid differing in nature and density; to the destruction of the constituents of the blood, and to molecular disturbance; but none of these hypotheses have been adopted.

Fréze (*"Medical Times and Gazette,"* vi, 1875, p. 120) concluded from his experiments that the transfusion of a small quantity of blood would not produce an appreciable amount of fever, but that a large quantity, if preceded by bleeding, was always succeeded by fever. Albert and Stricker (*Ibid*) transfused into healthy animals their own blood by letting it flow directly from the femoral artery into the femoral vein of the same side, and each time fever resulted. Billroth repeated these experiments, but failed to obtain the same results. Leibrecht (*Ibid*) concludes, from similar experiments recently repeated, that an elevation of temperature, represented by  $2^{\circ}$  centigrade, may result from the simple transfusion of blood, and fever, if occurring at all, will always occur within three hours after the completion of the operation. In Hütter's (*"American Journal of Medical Sciences,"* vol. lxx, p. 250, and vol. lxxiii, p. 256)

cases of arterial transfusion with defibrinated human blood, and in Ewald's (*Ibid*, vol. lxx, p. 256) cases with the defibrinated blood of persons suffering from bronchitis, fever ensued. Fever resulted in all the cases of Hasse and Thurn (*Ibid*, vol. lxxix, p. 270), who employed defibrinated lamb's blood. Kuster (*Ibid*, vol. lxxviii, p. 263) had no unpleasant symptoms with human defibrinated blood, but fever and other unpleasant phenomena in cases in which lamb's blood was used. Nicholas Duranty's (*Ibid*, vol. lxxvii, p. 528) experiments on animals with cooled blood were entirely satisfactory. The researches of Ponfick (*Ibid*, vol. lxx, pp. 247, 528) and Landois (*Ibid*, vol. lxxviii, p. 527) seem to have established the deleterious influences of the introduction of the blood of different species in producing disintegration of the red blood corpuscles, and setting free hæmaglobin, which can only be eliminated by the kidneys. These facts, together with the additional observation of Landois (*Ibid*, vol. xviii, p. 527), that copious transfusion produces massing of the blood cells, which tends to extensive coagulation, and the more recent demonstration by Panum (*Ibid*, vol. lxxi, p. 261), that an extra supply of red blood corpuscles involves an additional consumption of oxygen, and that heat is evolved by their oxidation, may furnish the key by which this problem may be solved.

These results, both clinical and experimental, seem to establish the hæmic origin of the fever. Yet, the not unusual occurrence of other phenomena denoting "disturbance of the functions of innervation and circulation"; the sudden and rapid ascent, and, in successful cases, the equally rapid descent of the temperature, suggest the probable coöperation of a neurotic element, to which attention has been recently directed by Dr. H. C. Wood, Jr. (*Toner's Lectures*, No. IV, 1875). The doctrine is, however, not universally accepted, that elevation of body temperature and fever are synonymous. This source of error can only be eliminated by more thorough and carefully recorded clinical histories.

The clinical and experimental observations, apart from the accidents incident to the formation of coagula; the conveyance of emboli into the general circulation; the introduction of air; the too rapid repletion of the right side of the heart; and the

injurious effects upon the blood mass, favor the conclusion that the chief cause of failure and death lies in the febrile phenomena, which are, perhaps, proportionate to the amount of fluid transfused, enhanced by any preëxisting fever or previous hæmorrhage, and the neglect of this febrile condition in the subsequent management of the case. Hence it is that the largest percentages of recoveries have been in those cases in which there was a previous reduction of temperature, and in those uncomplicated with preëxisting pyrexia, or subsequent irritative fever, as in cases of surgical hæmorrhage.

Defibrinated human blood and milk are not exposed to the pernicious effects pointed out by Ponfick and Landois. The introduction of the former is less likely to produce fever than milk, but the fever following the transfusion of milk is probably unconnected with the setting free of hæmaglobin; the consequent renal complication, and the resultant uræmic phenomena.

IN PUERPERAL MEDICINE there has been steady and commendable progress. Thanks to Hewitt, Barker,\* Cairns,† Goodell,‡ and others equally eminent, puerperal convalescence has well nigh ceased to be regarded as a season of punishment, of seclusion from sunlight and fresh air, and of starving penitence. The conventional charred bread, mean tea, and meaner slops—the unsavory products of shadows badly boiled—have been supplanted by more generous, nutritious, and easily digested diet, thus contributing to the pleasures and comforts, and lessening the perils of the lying-in.

The subject of puerperal fever continues to attract attention, and notwithstanding the extensive and valuable researches in pathological anatomy, and especially in the study of the morbid lesions of the several diseases, which, unfortunately, have been too frequently comprehended under the generic term “puerperal fever,” certain questions, which constitute the essential basis of a definite and practical knowledge of its history and nature, remain unsettled. The existence of an essential fever, peculiar

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\* Puerperal Diseases of Women, p. 26.

† American Journal of Obstetrics, vol. iv, p. 558.

‡ Obs. Journal of Great Britain and Ireland, vol. ii, p. 52, supplement.

to puerperal women, resulting from unknown blood changes (Barker, *Puerperal Diseases*, p. 476), and unaccompanied by uniform and constant morbid lesions, is both affirmed and denied by men of acknowledged eminence. But recently Duncan (*"Edinburgh Medical Journal,"* March, 1876, p. 774), from a careful study and graphic analysis of the mortality statistics of the city of London from 1848 to 1874 (both inclusive), has reached the conclusion that "puerperal fever or pyæmia" is absolutely free from epidemic prevalence, and that it has no causal relation whatsoever, either with erysipelas or scarlet fever. Thus, in the very threshold of our studies we are confronted with antagonism of facts and deductions, and men of honest convictions find themselves arrayed in open controversy.

The recognition of the morbid entities which are severally peculiar to puerperality, and their differentiation, by distinct and characteristic symptoms, has extended and enlarged the resources of preventive and curative medicine; but the relation of the lesions to the parturient womb remains obscured by the uncertainties of conjecture and hypothesis. It was long ago admitted that parturition, though a physiological process, was necessarily one of violence. Van Swieten and Willis, two centuries ago, and Eisenmann (Duncan, *"Obstet. Jour. of Great Britain and Ireland,"* vol. ii, p. 360) in 1837, regarded puerperal fever as "wound fever"; then followed the theories of Cruveilhier, Simpson, and others, who traced its analogy to surgical fever (Duncan's Address, *"Obstetrical Journal of Great Britain and Ireland,"* vol. ii, p. 360); then a further advance when phlebitis and lymphangitis were first recognized; then, again, a grander progress when the pyæmic and septicæmic processes were elucidated, and the doctrines of thrombosis and embolism were promulgated by Virchow. To these have been added the investigations into the nature and intensity of septic poisons; the theory of parasitic disease; and the researches of Sanderson "on the infective product of all acute suppurative inflammations." Now all have come, with Buhl, Virchow, Klob, and others, to regard the traumatism of the inner uterine surface, the unavoidable lesions of continuity in the generative tract, and thrombosis of uterine sinuses as foci of disease.

## CLINICAL RECORDS.

"Ex principiis, nascitur probabilitas: ex factis, vero veritas."

ART. I.—*Two Cases of Meningitis of Different Character occurring in Children.* By P. BRYNBERG PORTER, A. M., M. D., Attending Physician to the New York Free Dispensary for Sick Children, and for Diseases of Children at the Demilt Dispensary, New York.

The following cases present, I think, some points of special interest. Both were in private practice, and the first occurred in an infant surrounded by bad hygienic conditions, and at a time when cerebro-spinal fever was epidemic in this city. During the quarter of the year in which it occurred, no less than four hundred and ninety-two deaths were reported from it, and I can not doubt, therefore, that the case was of this nature, though several of the prominent symptoms of the disease were lacking. There is, however, perhaps no affection which varies so greatly in its manifestations as this.

The second case, on the other hand, occurred in a child comfortably situated in life and previously enjoying robust health, and at a time when there were no cases of epidemic cerebro-spinal meningitis in New York. Therefore, with the history given, I am disposed to regard it as of traumatic origin. The severity of the attack is shown by the early occurrence of unconsciousness. Both cases proved fatal, and it is to be greatly regretted that in neither was a post-mortem examination permitted.

CASE I.—Peter G., aged five months. I first saw the little child at noon on June 7th, and it was then suffering from ulcerative stomatitis, with costiveness and considerable febrile movement, but there was no suspicion of anything like meningitis. There was a little eczematous eruption on various parts of the body, which had made its appearance some time before. In some places it was drying up and fading away, while in others a fresh crop seemed to be coming out.

June 10th.—I did not see the child again until 11 A. M. to-day. The stomatitis had yielded to appropriate treatment and was almost entirely gone, but there was great heat of skin,

especially about the head. Unfortunately, I did not have my thermometer with me to ascertain the degree of temperature. The mother said the child had had "cramps and spasms," and that she had noticed a discoloration about the back of the head. On careful examination, however, I could discover nothing like petechiæ on any part of the body. The little patient seemed comfortable, and during my visit, which was somewhat prolonged, there was no appearance of any convulsive seizure whatever. The respiration was nearly normal, and the pupils responded naturally to light. The child nursed well, and there was no vomiting, no "hydrocephalic cry," and no opisthotonos. The intellect, however, seemed dull, and I noticed an abundant puriform secretion about the eyes. From the absence of any other affection that could account for the symptoms, I concluded that the case was one of meningitis and prescribed accordingly, though I did not mention my suspicions to the mother, as I did not regard the diagnosis as fully established. I may state that the bowels had been kept in a soluble state by magnesia, which I had ordered at my previous visit.

9 P. M.—The disease has progressed with frightful rapidity, and the case is now altogether hopeless. On my arrival I found the child livid and apparently entirely unconscious. The respiration was somewhat hurried, there was œdema of the lungs, and frothy serum exuded from the nostrils. The head was still hot, but the extremities were quite cool. Every little while there were convulsive movements of the facial muscles and the limbs, but they were not violent in character. The mother states that the child remained in statu quo for a considerable time after my morning visit, when it began to vomit the medicine it was taking, and soon became almost unable to nurse. At three o'clock there was a marked change for the worse, and it vomited a very large quantity of fatty matter mixed with blood. This emesis was followed by severe convulsions. During my visit the attempt to suckle it was made, and it seemed to take the breast mechanically for a moment, but immediately afterward withdrew its lips from the nipple. The pupils contracted on the approach of light, but one of them soon dilated.

The child died shortly after 11 P. M., and I afterwards

learned that during the last two hours it was able to swallow and retain the medicine (iodide of potassium and ergot), and also some brandy which had been ordered.

CASE II.—March 19, Mary H., aged five and one-half years, of German parentage; an unusually pretty and interesting child, who had previously enjoyed good health. Last summer she fell down a flight of stairs into a cellar, and cut and bruised her head severely; but the fall did not seem to have been followed by any attack of illness. On the 11th of March, while rolling a hoop on the street, she ran into some one with great force and was thrown violently down. A bad contusion of one knee was caused by the fall, and she is said to have struck her head also, while her whole system evidently received a very severe shock. The parents described her as looking “red and blue in the face” when they first saw her after the accident. There was a constant tendency to vomit, and soon afterward her whole head seemed much swollen. On the 14th she was seized with spasms, and it was noticed that at this time her face presented a mottled appearance, blotches of red being scattered over it. In these convulsions she worked her right arm and right leg violently, and afterwards her left leg also, but not the left arm. Before their occurrence she complained of very severe cramps in the abdomen. She also attempted to vomit once or twice, but actual emesis did not take place. Her diet previous to this attack did not seem to have differed at all from that to which she was accustomed. After the convulsions had ceased her mother gave her senna and manna, but without the effect of opening her bowels. During the 15th, 16th, and a part of the 17th, she seemed almost entirely well. On Sunday, the 16th, she ate some prunes, and the bowels were moved once; the first time since the occurrence of the convulsions. On the day following she began ailing again. She complained of violent abdominal pains, and towards night grew feverish. Her face was flushed, and she then suffered from severe pain in the back of her head. On the next day (March 18) she seemed only partially conscious, but could be roused to complete consciousness. She had fitful sleep, and frequently started up with a frightened expression. There was considera-



ble febrile excitement, and she vomited twice during the day. I saw her for the first time to-day (the 19th) about noon, and found her lying on her back, with a frothy serum in the corners of her mouth. The face was slightly flushed; the skin dry, but not very hot to the touch, and the tongue moist and covered with a slight whitish coating. Abdomen flat. She was apparently totally unconscious, but seemed to be made uneasy when her person was touched. She endeavored to clench her teeth when the finger or a spoon was introduced into her mouth, but would swallow liquids. The pupils were considerably dilated, one more than the other, and did not appreciably respond to gradations of light. The introduction of liquids into her mouth would generally excite a spell of coughing after a short interval, and then blotches of bright red, which gradually subsided afterwards, would appear on her face. She did not cough at all at other times. There appeared to be absolutely no stiffness about the back of the neck, nor did she burrow her head in the pillow, but when left alone she would occasionally change her position, now lying on one side, now on the other, and again on her back. The respiration was rapid, and for the most part regular, and there was occasional moaning and sighing. The pulse was soft and 120 to the minute; the urine very scanty, and passed only at long intervals. The treatment consisted of half a drachm of sulphate of magnesia, to be repeated if the bowels were not moved by night, and ten grains of the bromide with five grains of the iodide of potassium every three hours. In addition cantharidal collodion to be applied behind each ear; beef tea and milk freely.

*March 20, 12 M.*—Still wholly unconscious. General appearance much the same as yesterday. The pupils widely dilated, even in a strong light. She can still be made to swallow liquids with ease. Bowels were moved four or five times by the sulphate of magnesia, the first passages being very dark and offensive. A considerable quantity of mucus in the bronchial tubes and trachea, causing rather an ominous sound. The frothing at the mouth entirely gone. Both blisters had drawn admirably. The respiration 25 to 30; pulse 160; temperature  $102\frac{1}{2}^{\circ}$ . Ordered the medicine continued, and in addition par-

egoric and sweet spirits of nitre every four hours. Also ice to be applied intermittingly to the head and back of neck.

21st.—To-day the pupils respond readily to light, contracting to a marked degree when it is strong. No mucous râles in bronchi and trachea. Respiration much slower, 12 to 15 in the minute, and sighing and irregular. Pulse 160 and feeble; temperature 103°. I noticed that the conjunctiva of the left eye was considerably congested. Bowels have not been moved since yesterday morning. The finger drawn over the surface of the skin with some pressure excites a red patch of some size; and not a well-defined line of its own width. She swallows mechanically, and the eyes remain half closed, half open. Increased the bromide of potassium, and ordered the other treatment continued as before.

22d.—The condition not materially changed. The pupils, however, are dilated again, and now respond very feebly to light. Bowels moved once last night without medicine. Pulse 152; quick but soft and compressible, and occasionally intermittent. Respiration 17 to 20, and seems to be performed entirely mechanically and involuntarily. It is suspended for a considerable time (until the want of oxygen is felt), and then she respirees three or four times in rapid succession, after which there is again a period of repose. Temperature 103°. She tosses her legs about a good deal (particularly the left one), and the parents say they have noticed a tendency to clench the fists. The teeth are not now pressed down violently on any object introduced into the mouth, as formerly. Tongue moist and coated with a white fur, as before. The eyes are closed naturally. The conjunctiva of the left eye still injected. Discontinued the spirits of nitre and paregoric, but ordered the other treatment continued; also cantharidal collodion to be again applied.

March 23d.—In statu quo.

24th, 11 A. M.—Change for the worse. She has had some very slight convulsions, and the flush on her face is of a dusker hue, though still somewhat florid. Emaciation is beginning to be noticeable. Any pressure on the skin is followed by a deep blush, which remains some time, and this is true of the trunk

and limbs as well as of the face. She now lies on one side, with the eyelids half closed. The congestion has disappeared from the conjunctiva. Pupils dilated and do not respond to light. The last blistering fluid did not draw at all. Respiration averages 36 to the minute, and is performed in the same manner as before. The alæ of the nose notably dilated in inspiration. Considerable mucus in the bronchial tubes. Pulse 120 to 160, and exceedingly compressible; temperature  $103\frac{1}{2}^{\circ}$ . There seems to be a slight tendency to opisthotonos, now noticed for the first time. She still swallows mechanically. Bowels moved again by sulphate of magnesia. Ordered the same treatment continued, with the addition of brandy every hour in milk.

25th.—Through the night she had several slight convulsive attacks. Condition of pupils the same. Urine passed much more freely now. Respiration and pulse of the same character; the one about 30 and the other about 140. Temperature  $104^{\circ}$ . No tendency whatever to opisthotonos or to convulsions is now apparent. Treatment continued.

March 26th.—Patient died at 7 A. M. The parents say that she passed quietly away in the same profound stupor in which she had remained so long. The only change that they noticed in her for some hours before death was that her face (particularly about the nose and mouth) became every now and then ashy pale, and very cold to the touch. There were no convulsions. A dark-colored froth issued from the mouth just at the moment of death, and for a short time afterward. For a few hours previous she could not be forced to swallow. The pupils remained dilated to the last, having been permanently fixed thus since the 22d. On the 21st they contracted readily on the approach of a lighted candle.

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Facts and Theory.—In the consideration of the relation of facts to theory, Professor De Morgan in his "Budget of Paradoxes" asks the question: "What are large collections of facts for?" "To make theories from," says Bacon; "to try ready-made theories by," says the history of discovery.

## PROCEEDINGS OF SOCIETIES.

"Etsi non prosunt singula, juncta juvant."

**Tri-States Medical Society—Meeting at Vincennes, Ind.**

ADDRESS OF THE PRESIDENT, JOSEPH W. THOMPSON, M. D., PADUCAH, KY.

*Gentlemen and Brothers of the Tri-States Medical Society:*

We have met again, after the lapse of one year from the organization of this Society. To see you all once more is a great pleasure, and the earnestness in the work, which seems to move each individual member, strikes a responsive chord in my heart. Our humble thanks are due to the great Giver of all good, that since our last meeting we have not been called to mourn the loss of a single member by death. We should continue to leaven our labor with praise to Him who "healed the sick," and made merciful provision for the salvation of mankind.

This Society has its birth in an eventful period of our national history, the centennial of liberty and independence. Our people with commendable zeal, actuated by true patriotism, have celebrated this anniversary by a collected exhibition of their progressive development in the various branches of science and art, on the memorable spot where a noble and determined body of men declared by the pen of the immortal Jefferson, that they would be free.

Defying the world in honorable rivalry, we invited all the nations of the earth to compete with us in the comparison of achievements and resources; and from every land and clime they came; the Turk, the Persian and the almond-eyed Mongolian vied with the cultivated European for the award. Europe, Asia, Africa and the isles of the sea, contested with us and with each other, for the medal of America, and the result has been highly creditable to our own country.

The Medical Profession of the world, impelled by the same motives of patriotism and friendship, encouraged this grand and attractive exhibition and reünion of the American people around the "cradle of liberty," and caused to be held at the same time at Philadelphia, the annual meeting of the American Medical Association and the International Medical Congress; thus paying a willing tribute to American enlightenment and

progress, rekindling the memory of the founders of American medicine—Morgan, Shippen, Rush, Physic, Wistar, Kuhn and Bond, that noble band of pioneers, our professional ancestors; forever enshrined in our grateful hearts.

The brief discussion of the past and present of medicine, and especially American medicine, will, it is hoped, be not entirely uninteresting on this occasion. As has been beautifully and poetically said of one year, we may well say of one hundred years: This is "a sort of post-house, where the fates change horses," and a review of the past, with consideration of the present, as a basis of hope for the future, can not but be pleasant and instructive to all those who desire improvement, and are willing to labor for it.

Some men think our great improvement in the teaching and science, as well as our wonderful mechanical apparatus and appliances, are useless in the interrogation of nature, because they believe the field of discovery exhausted by our illustrious predecessors; but deep-thinking investigators all say that the science is yet in its infancy. Behind the veil which shuts out the future from our mortal vision is a vast storehouse of fact, to be brought forth by those who follow after us, and as inexhaustable as time. A celebrated steamboat captain on our western rivers, about the year 1830, made the round trip from Louisville to New Orleans and back in forty days, which was much shorter time than it had ever been accomplished in before; and on his return to Louisville there was a grand demonstration over this remarkable feat. Speeches were made by blazing bonfires, and our captain predicted, amid tremendous applause, that the time would come when the same trip would be made in thirty days. Ordinary steamboats now make the trip in fifteen days, and the steamer Robert E. Lee can do it in ten days. That captain (Anderson Miller), if he was alive, would be astonished to see his prophecy more than fulfilled. So it is with medicine. The knowledge is behind the veil, only waiting to be secured by intelligent, patient and well-directed effort. The huge, rough block of marble contains the statue with all its curved lines and graceful posture, and the sculptor must labor with diligent chisel if he would carve it out.

In the consideration and comparison of medicine and medical men, ancient and modern, many salutary lessons may be learned. Seeing the immense disadvantages under which the early doctors labored, and contemplating their wonderful achievements, in spite of ignorance, intolerance, superstition and the thousands of obstacles which have impeded and retarded the march of science since the world began, we are filled with admiration for their genius, patience and perseverance, and we involuntarily pay our debt of gratitude by honoring and revering their memory. Comparing the new with the old, gives us the proper appreciation of the inestimable privileges we enjoy—education and civil and religious liberty, freedom to make any investigation and uphold any doctrine we please, without fear of the ignorance of the people or the pains of the Inquisition. And seeing what was accomplished by the men of old with such limited liberty and means, may give us courage, while thankful for our good fortune, to exert ourselves and press forward in emulation of their noble deeds, against all obstacles, trusting, as they did, to the verdict of time, given by future generations, hoping the same just praise may be accorded to us that we so heartily render to those who have gone before us. I deem it proper on this occasion to mention only a few of the ancient physicians, sufficient to show how they labored and suffered, and what they accomplished; and also to give some views on the present enlightened and useful position of the Profession. And if I can awake one thrill of gratitude to our noble professional progenitors, or nerve one heart to exertion in behalf of our beneficent calling, for the future, I shall feel abundantly repaid.

Medical practice of some kind has existed among all the various peoples of the earth as far back as we have any authentic history; and we have no doubt man has searched in nature for something to relieve pain since the creation. In the civilized parts of the world we find the educated physician, and among the savages we find the "medicine man," who remains to-day the same as when first seen by travelers and adventurers. Leaving the latter in his wilderness, both mental and physical, we have at this time only to consider the former, who is the professional descendant of the great founder of the science, "the

divine old man, Hippocrates, the father of rational medicine.

Hippocrates was born about the year 460 B. C., on the island of Cos, in the *Ægean* sea; in whose city of the same name was situated the famous temple of *Æsculapius*, with its school of physicians. His ancestry, according to the heathen custom with men of renown, was traced, in the misty regions of mythology, to the "immortal gods," being descended on his paternal side from *Æsculapius*, and on the maternal from *Hercules*.

It was believed in ancient times that all diseases were caused by the anger of some offended god, especially in epidemics and plagues. This led the people to look to the priesthood for relief, and superstitious rites were used to appease such wrath. But reason had already asserted itself upon the subject to some extent in the schools of philosophy, and much had been found out through study, experiment, by accident and otherwise. Hippocrates gathered up all that had been learned before his time and improved and enriched it with the labor of his life. He originated the first regular system of the treatment of disease; and opposing the superstitious idea, he advocated material views, and demonstrated the importance of cleanliness and light. He combated the imposture of the priests and taught the pure doctrine of physical causes of disease, and applied physical remedies for their cure. "For the gods he substituted, with singular felicity, impersonal nature." He contended that supplication and penance were valueless in the curing of disease, being incompatible with the philosophic use of hygienic measures. He changed completely, though not without a struggle, the whole system of medicine; and as the revolution was effected amid the ignorant and fanatical prejudice of the people, stimulated by the unscrupulous priesthood, great courage, power, and influence must have been required to make it successful. It was successful, however, and should inspire us with courage to attack error and defend truth on any question arising in the Profession.

It is not within the scope of my purpose at present to discuss in detail the peculiar theories and treatment of disease by Hippocrates, which you are aware would fill whole books. All agree that his crude knowledge was certainly the "seed in good ground," from which sprung the glorious, universal medical tree

which covers us all with its protecting foliage. Many principles laid down by him are still accepted, and his labors form the basis of our science. His fame will live forever, and all the world, especially medical men, should venerate his name, certainly almost as fully, if not as irreligiously, as his follower Galen, who said that "we ought to reverence the words of Hippocrates as the voice of God." He died in Thessaly, according to different accounts, of great age, varying from 85 to 109 years.

Perhaps the most distinguished of the ancient philosophers whose attention was given to medicine was Aristotle. His investigation of nature was so able, and his reasoning and philosophy so sound, that twenty centuries later Cuvier and Bichat, the leading writers of the world on that subject, adopted his classification of comparative anatomy. Aristotle was deeply imbued with the views of Hippocrates, and the firm foundation of his teaching was furnished by the supreme, commanding genius of the "Sage of Cos."

Aristotle, the founder of the school of Peripatetics, was born at Stagira, a Greek colony of Macedonia, about the year 384 B. C., and died at Chalcis, at the age of 62 years. He was naturally a physician; his father having been medical adviser to King Philip of Macedonia, and he himself practiced medicine for some years. But his studies and researches in anatomy and physiology, and his philosophical doctrines in the mode of teaching, formed the basis, and were adopted and used almost exclusively for many centuries. Losing his father early, he plunged into dissipation and wasted his patrimony in prodigality of all kinds, and became a soldier, and was afterwards forced by poverty to resume his early studies, medicine and philosophy. He attended the school of Plato, and became completely absorbed in study and contemplation. He supported himself at this time by keeping a small shop, where he sold medicinal herbs, and prescribed their use, according to the custom of the day. From such a beginning arose one of the mightiest minds that ever enlightened the world in any science. The drug clerk in his little shop dispensing the rude medicinal preparations of his day was the same Aristotle, the preceptor and friend of Alexander



the Great, who afterward, by study and experiment, reasoned out the true doctrine of comparative anatomy, which has stood all the tests of time, which has been approved and adopted by the ablest leading writers, and which forms the basis of our teaching and practice at this day. It was his influence that gave a beneficent drift to the mighty physical force of the "conqueror of the world," and secured the founding of the city of Alexandria, with its famous library and school, under the Ptolemies, where knowledge of all kinds from every source was collected, preserved, distributed and handed down to succeeding generations; even to us as we meet together here, a professional brotherhood, bound by ties of mutual respect and assistance, and standing erect on the ever enduring foundation of the science laid by the transcendent genius, courage and devotion of Hippocrates and Aristotle.

Nearly five centuries after Aristotle came Claudius Galen, whose authority in medical matters for 1,000 years after his death was almost supreme. He was born at Pergamus about A. D. 130, and died there A. D. 200. He commenced the study of medicine at the age of 17 years, and afterward spent some time in Rome, where his reputation as a philosopher and anatomist became preëminent, and he was employed as physician to the Emperor Marcus Aurelius. His lectures, practice and writings placed him at the head of the Profession; a high position which he held for more than ten centuries without a rival. His commentaries on the works of Hippocrates inseparably connect these two great masters in medicine. Together with Aristotle, they are the great luminaries that light the lonely way through thousands of years of pain and suffering of the human race, furnishing the only rays of hope during all that dark period. Though a heathen, his physiological investigations, confined to the lower animals, convinced Galen of the existence of the true God. With all the enthusiasm of a religious man, he denominated his writings "a true and real hymn to that awful Being who made us all." He tells us, that in his opinion, "true religion consists not so much in costly sacrifices and fragrant perfumes, offered upon His altars, as in a thorough conviction impressed upon our mind, and an endeavor to pro-

duce a similar impression on the minds of others, of His unerring wisdom, His resistless power, and His diffusive goodness. There is no doubt that the analysis of nature, unaided by the "written word," carried conviction to the philosophic mind of this great man, whose authority for a hundred decades gave direction to science in the medical schools.

Besides consuming too much time, it is altogether unnecessary for the present purpose to give a more extended view of ancient medicine, and we pass over the various noted men and schools who flourished after Galen, and come at once to some distinguished names of more modern times, and nearer to us geographically as well as in chronology.

Previous to the fall of Constantinople the Greek medical writers had been read only in faulty Arabic translations; but after that event learned Greeks carried their language and literature to the Western World, and medical men, availing themselves of this knowledge, now read the works of Hippocrates, Galen and others in the original. Thomas Linacre, physician to Henry VIII of England, was very zealous in this, and established professorships at Oxford and Cambridge for illustrating the works of Hippocrates and Galen, and laid the foundation of the Royal College of Physicians at London. Medicine and surgery, constantly progressing, have since that time generally received the countenance and support of the British Court and people, and also of most of the other nations of Western Europe.

During the middle ages surgical operations were avoided by the priests, who also acted as physicians, because it was held to be a violation of the law of God to shed blood, and that branch of the Profession was entrusted to what was termed barber-surgeons, men who cut flesh as well as hair. At this time there lived a man who began his career as a barber-surgeon, but his genius and power of thought and observation enabled him to work a revolution in an important branch of surgery. In 1536, Ambrose Paré, while serving as surgeon with the French Army, in Provence, on one occasion discovered that his supply of oil, which was used boiling-hot for cauterizing wounds, was exhausted; this circumstance caused him great anxiety, but he

was soon relieved at finding the wounds which were not cauterized to be in better condition than those that were. By this fortunate circumstance, the result of neglect or inability to procure the oil, he had accidentally made a great discovery in the treatment of wounds, and he at once abandoned the use of oil. He also substituted the ligature instead of the cautery in controlling hæmorrhage after amputation, and the principle then discovered by him is now used every day.

All great discoveries are the result of combined thought and labor, sometimes aided by fortuitous circumstances like the foregoing, but always accompanied with courage.

Cæsalpinus conceived a knowledge of the circulation of the blood. Sevetus taught that there was a lesser circulation in some of the internal organs of life, but it remained for William Harvey, an English physician born in 1578, after having taught the circulation of the blood in his lectures for ten years, to publish his great work on the subject in 1628. Like all discoverers, so much in advance of his contemporaries, his book was severely criticised, but the professional mind of his time became satisfied it was demonstrable; and what is rather unusual, he lived to see his doctrines fully established and accepted. He was a great man, and truly devoted to the science of medicine. At his death he endowed the College of Physicians with his paternal estate, one of the conditions of the grant being, that an annual oration should be delivered—"an exhortation to the members to study and search out the secrets of nature by way of experiment, and for the honor of the Profession, to continue mutually in love." This is good advice for us now, and may we not indulge the hope that in following Harvey's first injunction, we forget not the last?

In the eighteenth century lived those distinguished contemporaries, John Hunter and Edward Jenner. At the age of 21 years Jenner was the pupil of Hunter, and a lasting friendship existed between them. No greater blessing was ever bestowed on the human family by the mind of man than the discovery of vaccination. Before its introduction by Jenner, it is estimated that the small-pox destroyed in Europe alone, 400,000 people annually, besides leaving great numbers blind and disfigured.

What estimate can be made of the good that has been done all over the world by the discovery of this great preventive to the loathsome scourge? Besides saving useful and valuable lives, and preventing sorrow, suffering and woe to our race, Beauty is indebted to it; for its protective qualities have saved her queens from a loss which no human aid could, or Divine aid ever did repair. It protects equally the hovel and the palace, falling, like the gifts of Providence, on rich and poor alike. How feeble are our weak attempts to give full meed of praise to the noble philosopher, who, in spite of many obstacles, at last succeeded in establishing it for the benefit of his fellow-man.

Both William and John Hunter were men of genius. John was the younger by ten years, and was by far the most original man. He did more to advance the cause of medicine, by his scientific investigation and doctrine of pathology, than any other one man. The basis upon which he relied to establish his views was the same source from which his ideas were drawn, the complete analysis of nature. In search of truth, he subjected all doubt to the most critical test, being therefore very successful in discarding error. Buckle says of him: "For comprehensive and original genius, he comes next after Adam Smith, and must be placed far above any other philosopher whom Scotland has produced." No man ever made greater exertion for the development of nature than this most indefatigable thinker and worker. His investigations covered the whole range of the animal kingdom. "He dissected above five hundred different species of animals, exclusive of different individuals, and also exclusive of the dissection of a large number of plants, and the result was the celebrated museum which bears his name, and which at his death contained over ten thousand specimens, showing the various phenomena of nature." This museum, the most noble contribution ever received by science from one person, was all the resource left to his wife and children for support, and was purchased by the British nation in 1789, and placed in the keeping of the College of Surgeons, where it now remains, emblem of the gratitude of the people to their great benefactor. Not so fortunate as Harvey, he did not live to see the full fruition of his labors, but

they have been appreciated and accepted by succeeding generations. To him is justly given the credit for nearly all the improvements in surgery which appeared within about forty years after his death. "He is the father of pathology, if we consider what pathology was when he found it, and what it was when he left it." His genius, his energy and his lofty mind have raised an imperishable monument to his memory; and in extending and enriching the science of medicine and surgery, he most worthily demands our gratitude and admiration as one of the greatest benefactors of his race.

The contemporaneous history of the great men I have named shows that scientific investigation and discovery were hampered and obstructed by all the obstacles which could be thrown in the way by bigotry, superstition and ignorance. In the earlier days there was less restraint, the philosopher being held in awe, principally by his own superstitious fears; the arm of governmental power, instead of crushing, left the investigator to wrestle with his own dread of the anger of the gods or the rage of the ignorant people. But it was in the middle ages, when religious fanaticism enveloped the world in its dark and bloody robe, that a night of gloom set in on science, which was to be contemplated only with horror by future generations. If a student worked early and late, endeavoring to wrest from unwilling nature some knowledge of her laws, he risked his life, being liable at any time to be accused of dealing with the devil, and subjected to the pains of the Inquisition. The Bible was considered the rule to govern all human action, whether moral, medical or scientific, and the severest penalties were inflicted on those whose writings, in the judgment of the inquisitors, did not come up to the standard. Dissection, that most important of all things in the study of medicine, was forbidden. The ancient warlike people, though ever so fond of battle, carnage and the shedding of blood, looked with horror on such a thing as the investigation of dead bodies for the purpose of learning the laws which sustain human life. The scientific medical philosopher did not escape the general proscription which prevailed in the days when the writings of Copernicus were burnt by the hangman; those famous books, which contained the origin of

the principles by which we read the stars, the plan by which the ancient mariner sailed across the sea, and in our day Professor Tice makes his prognostications of the weather. The age when Bruno was burned at Rome for teaching the plurality of worlds, and Galileo was forced to recant his philosophic conviction, that the earth turned round. Aristotle, on account of his scientific investigations, was accused of impiety, banished from Athens, and died in exile. Constantinus Africanus, the most celebrated member of the Medical School of Salerno, was driven from his native country as a sorcerer. Albertus Magnus, the most learned man of the middle ages, a follower of Aristotle, was regarded as a magician, and accused of illicit intercourse with Satan. Many idle stories of his "miracles" were told by the ignorant people. Arnold de Villa Nova, Physician to the King of Arragon, great in medicine and alchemy, under accusation of defective orthodoxy, lost his position at court and was excommunicated. Having fled from Spain to Paris he was pursued by ecclesiastical influence with the charge of having sold himself to the devil. Retiring to Montpellier, he became a member of the Faculty of Medicine. He was finally shipwrecked and drowned while on a journey to Rome for the purpose of operating on Pope Clement V himself, for stone, who, notwithstanding his sentence of excommunication, had earnestly besought a visit from the renowned Doctor, in hope of relief. Roger Bacon, the English Ecclesiastic, "the Admirable Doctor," the great student and writer on philosophy, mathematics, physics and astronomy, was accused of practicing magic and astrology, and selling himself to the devil, and at the age of sixty-four years the feeble old man was cast into prison, where he remained ten years. Upon his death-bed, at the age of seventy-eight years, he repented having taken so much trouble for science, saying, "it is on account of the ignorance of those with whom I have had to deal that I have not been able to accomplish more."

The banishment of the learned Jewish physicians of the "Dark Ages," the most scientific men of their day, through the animosity of French ecclesiastics in the fourteenth century, is described as "a most revolting spectacle to see so many learned

men, who had adorned and benefited France, proscribed wanderers without a country or asylum." Awful are the details of the expulsion of the Jews from Montpellier, among whom were the leading Professors and Doctors of the Faculty. Such was the fate of intelligent men who endeavored to turn the tide of ignorance, bigotry and superstition in that distant age. The darkest night rested on science of all kinds, "which only vanished when the Æsculapian cock announced that the intellectual dawn of Europe was on the point of breaking."

In later times, when men became more civilized, and the light of reason had begun to shine from accumulated knowledge, ignorance and prejudice (though with less success) still confronted science in its onward march and upward progress. John Hunter could never command the attendance of more than twenty persons at one time at his lectures, and was denounced by his contemporaries as an innovator and enthusiast. Edward Jenner only succeeded in establishing vaccination, after a bitter and determined contest, under most discouraging circumstances, which lasted for years. William Harvey himself predicted, and afterward recorded the fulfilment of his prophecy, that the publication of his work on the circulation of the blood would diminish his practice.

The careful study of the history of medicine would be of great benefit to every medical man. It is a story of great antiquity and noble courage and achievement. For many centuries regularly organized medical societies for the discovery of truth were neither heard of nor thought of. The various schools filled their place to some extent; but each school taught its peculiar doctrine, and condemned all others as falsities. Bigotry and fanaticism reigned in them, as in other sects of that age of the world. Often when a great mind, no longer able to be held in leash by the dogma of some particular school, slipped the cords which bound him, and taking a new departure, announced to the world some great discovery, he was immediately denounced and persecuted, and especially by those who had grown old in the practice of some peculiar mode. The indomitable perseverance, the suffering and courage of the physicians of old, justly command our admiration and respect.

Laboring among superstitious, ignorant people, cumbered with ignorance themselves, groping in the dark, as it were, with none to lead them, dependent on rude and imperfect appliances for experiment, they struggled on, some falling by the way side, others persecuted and prevented by every obstacle, even death itself, and yet through thousands of years they were true to the trust of Hippocrates, and succeeded in handing down to us those great fundamental truths which form the foundation of our noble science.

We, the members of the modern Medical Profession of to-day, own, possess and enjoy this priceless heritage. This broad, firm foundation, this noble legacy, has been accepted, and upon it the temple of medicine has been erected, whose lofty spires and shining minarets reach heavenward. Now magnificent medical colleges and schools cover the whole civilized world, where are taught by able faculties the true doctrines of disease and cure upon the highest and best scientific and practical principles. The enlightened rulers of the earth, instead of frowning upon them, furnish every facility in their power to add to their perfection. How different from the past! What a wonderful improvement is here! When we consider what we accomplish now, we can but be astonished that the early doctors ever did anything. Free and untrammled we pursue our course! Formerly the greatest mind and stoutest heart quaked with fear at the thought of attacking some popular superstition or ruling dogma, and only once in a great while a man appeared with courage sufficient for the undertaking. What a change! In these enlightened days we search for the truth everywhere. No professional dogma nor religious superstition can screen with its mystery or antiquity the error which lies at its base. The ancientness of an idea does not secure it followers now. The human mind has been so opened and educated in the light of reason, that I am sure there is not a person within the sound of my voice who would not be willing to renounce the whole system of medicine, with all its glorious history, with all its endearing ties, if it was demonstrated to him, beyond doubt, to be a delusion. Truth is king, and in its path lie the dead bodies of the errors and fallacious dogmas of all ages. All are



subject to it. There can be no exception. Every thing in life, every thing in death, must go down before the might, majesty and dominion of this our risen Lord. Our forefathers, for a time, were compelled to grovel in the dust before the usurper Error; but we, in this blessed nineteenth century, have, in all its glorious plenitude, the spirit of the words:

"Truth crushed to earth shall rise again,  
The eternal years of God are hers."

When we experience a joy that glads our heart and gratifies our desires, it is natural to look for the cause of our pleasure, and render just gratitude to the author of it. When we look back on what medicine was, and then on what it is, we see a great revolution, and naturally ask ourselves, why is this? What wizard wand hath brought this change? And following the inquiry with investigation, we find that it is the human mind, opened, enlightened and refined with knowledge. "The schoolmaster is abroad." We worship in a grand new temple now, and its God is Truth. Its influences extend to the uttermost parts of the earth. The medical papers and periodicals are its missionaries, and the modern medical societies are its churches, scattered all over the world. Knowledge freed the world. With ignorance, vanished prejudice and intolerance, and now standing in the broad light of day, with her votaries around her, universal science and brotherly love spread their white wings of peace over the whole earth, to bless and protect it.

Not a great many years ago members of the Profession were in a great measure strangers to each other in different countries; and neighboring practitioners were almost constantly at war, especially in small towns and country places, where consultations were wrangles, sometimes disputes, over dying patients. All this is gone now, and we are an organized band of brothers.

We have the medical clubs in the cities and towns, rendering ready help to each other by advice and assistance, the county medical society, which meets once a month, the district medical society, which meets quarterly, the State and Tri-States medical associations, with their annual meeting, and the National Medical Association and the International Medical Congress, which

also assemble once a year, the former, at some point in the United States, and the latter at different places in the Old and New World. The present extended and improved system of railroads, steamships and telegraph, annihilating distance and time, furnish easy means of communication and association, and our members now have friends and acquaintances in all parts of the world.

These societies, clubs and associations have for their primary object the search after truth, and its dissemination among the Profession and people, and also to promote and cultivate brotherly love and unity of action among us. In them every member has a voice. None are too proud and high to recognize and conform to their rules, for they represent the majesty of the science. None are too poor and low to be recognized and protected by them, for in the inquiry after truth the poor have often contributed more than the rich, the lowly have often found what the lofty were too elevated to discover.

These organizations are not only valuable but indispensable in the present condition of the people of the earth, and their preservation of knowledge is not more praiseworthy than the fostering care they extend to genius and ability struggling with poverty. If a rich man, a physician with national or world-wide reputation, makes a valuable discovery in his practice, or reasons out a sound theory with his well-ordered and educated brain he gives all mankind the benefit of it, by furnishing an essay on the subject before his medical society, county, State or national; it is heard by representative physicians, published in the proceedings, and the medical papers and periodicals scatter and distribute it broadcast over the earth. Many poor men, of little reputation and education, often possess powerful natural minds; and when one of these brings to light some important fact or principle for alleviating pain and saving life, he is not compelled to struggle, as formerly, waiting, hoping and despairing of getting it before the Profession and people; but is heard in the societies with equal respect, and the merit of his work is gladly accepted for the benefit of all. Before the day of medical coöperation men of genius and talent have been held back for years for the want of means and influence

to make an experiment or reach the public ear. The societies have supplied this great want in the Profession, and they form the palladium of its strength and endurance. In their perfection they embody the idea of the millennium, where every member, forgetting himself, gives the benefit of his mind and might for the good of the whole. This community of interest reaches toward the conception of heaven, where each disembodied spirit in the shining throng endeavors to make every other spirit as happy as himself, and the happiness of the homogeneous whole is Heaven.

What a great and glorious revolution has taken place! Instead of darkness, we have light. Instead of ignorance, we have knowledge. Instead of hatred and malice, we have brotherly love and kindness.

And now considering what wonders the ancient philosophers accomplished, under the adverse circumstances before mentioned, should not we with our civil liberty, our improvements in every branch of the Profession, scientific and mechanical, do a great deal more? It will not do to say the field is exhausted. The future of the early doctors was as completely hidden and as uncertain to them as ours is to us; and with energy and faithful laborious use of our immense advantages, our knowledge, our freedom, our frequent interchange of views and opinions, reports of actual experience through medical societies, papers, and magazines, there can be no doubt of success. From the standpoint of our commanding position we see every reason to hope that the status of the Profession will be as much higher a hundred or a thousand years hence as our present condition is above that of the same number of years in the past. Indeed, with our unparalleled and delightful opportunities, the ratio should be much greater.

The Medical Profession is as far if not farther advanced than any other of the sciences. Ignorance, superstition, and intolerance have received a defeat from which they will never recover. We are stepping far and fast. We are pressing onward to the goal of the hope which began the race in the days of Hippocrates. When reason shall assume universal dominion, and all things unable to bear the test shall perish before the resistless

power of thought, and no more cumber the progressive march of science; when the human mind, laying aside every weight and disenthralled from every burden of error, shall duly and gratefully appreciate the goodness and wisdom of God and the "adaptation of all His works."

Properly considered and viewed aright, the guerdon of study and labor in our profession is worthy of the effort of the greatest mind. It may not possess the meteoric brilliancy which dazzles for a while in some of the sister sciences, but it has enduring qualities shared by none. Where are the laws which were in force in the early days of medicine? How long would a fortification of that age withstand the mighty cannon of the present day? Both the lawyer and the soldier have passed away with their work, but the teachings of Hippocrates, Aristotle, and Galen are, in the main, as good now as when first proclaimed. Compare the great contemporaries, Pericles and Hippocrates. The first was an able, eloquent, and patriotic statesman of Athens; the last was the "Father of Medicine." Pericles and his country, and the political issues for which he battled, have been dead and gone over two thousand years. Hippocrates and his work come home to each of us, personally, when we feel the pains of disease, and we admit that he knew us better than we know ourselves. Take, if you please, two distinguished Kentuckians of our own century—Henry Clay and Ephraim McDowell. Henry Clay, the lawyer and statesman, shot like a meteor across the political horizon. He raised his voice in the Senate, and the whole people hung upon his words. "He touched his harp and nations stood entranced." But who cares now for the Missouri Compromise, or the gradual emancipation of slaves, the issues which he rendered famous? Ephraim McDowell, sitting in his quiet study at Danville, Ky., was the "Father of Ovariectomy," which has given to the female sex more than thirty thousand years of actual life. I speak it with reverence as a Kentuckian who honors his memory; but Mr. Clay is being forgotten every day as the issues of his career are obscured by time and the present agitated political condition of the country. Ephraim McDowell's fame has almost just begun, and will continue to live and grow as long as there is gratitude

in a woman's heart. The great reason of this is apparent, from the fact that the exigencies of human affairs call for different laws and political positions in different ages of the world; and in military affairs the improvements in means of defence have kept pace with those of attack. Not so with medicine, where the improvement is all on one side. "Men die, but MAN is immortal." There is no change in the subject upon which medicine operates. The citadel of disease, the human frame, has only the same defences as of old, while its great antagonist, the Medical Profession, with improved arms and better tactics, the accumulation of thousands of years of thought, is storming it still.

It is a traditionary precept handed down from Hippocrates, that "we should suffer present censure for the sake of future good"; and although our system of medical societies has received the censure of those who ignorantly or willfully misunderstand them, any intelligent man of candor will admit the comparative elevation of the Profession, and also that it is due, for the most part, to the coöperative action of the societies, which of itself is sufficient vindication; and we can bear the blame and trust to time and a grateful people. And before closing, I wish to call attention to a special good accomplished by the organization in our own section in the treatment of diseases common in certain localities. Works on the practice of medicine, by London and New York authors, may be sound in general theory, but being based on experience with the prevailing diseases of those localities they can not be relied on exclusively as guides to practice in our Western and Southern States; diseases with us having different leading characteristics and being influenced by dissimilar morbid causes. For instance, in some countries pneumonia, pleuritis, and inflammation of the serous membranes call for active bloodletting; but the malarious complications, peculiar to our bilious locality, produce a tendency to depression and congestion, demanding a supporting course to elevate the vital powers and preclude the resort to the lancet in ordinary cases. In the city of New York the leading practitioners rarely use mercury, that remedy being required there in a much less degree than in the malarial regions of the West

and South, where climatic influences producing torpid action of the secreting organs, mercury is much more frequently needed and used than in New York, where the poison exists only to a limited extent. We are, therefore, compelled to leave the standard works, to some degree, and look elsewhere, and the papers read before the medical societies and contributions to medical journals by physicians residing in the malarial country furnish the most thorough experience and valuable information on the subject for use in our daily practice in this part of the United States. Without the societies, we should each be thrown upon our own resources, and deprived of that interchange of opinion and experience, and denied that valuable coöperative unity of action so desirable and essential to general success in any branch of science.

This Tri-States Medical Society was organized in this city just one year ago by the members of the Profession in the States of Indiana, Illinois, and Kentucky, at which time the distinguished honor was conferred on me of first President of the organization, the appreciation and memory of which shall go with me while I live. Being chosen from among so many abler men, I only feel the more the force of the compliment and my own unworthiness. Being called to the position by my professional brethren, I have tried and shall continue to try to fill it to the best of my ability, confidently and affectionately trusting to the same kindness which elected me to develop into charity for all errors of the head where the heart is right.

This Society has for its object the promotion, collection, and promulgation of medical knowledge, the improvement of its members, and to assist in elevating the standard of the Profession, and also to cultivate fraternal feeling, untrammelled by local prejudice, feuds of schools, or otherwise. We have had a good beginning, and we meet again under circumstances most propitious. The committees will report, and it is expected many able papers will be read for our edification and instruction. I sincerely hope that all may enjoy the meeting, and return to their homes improved and gratified and determined to do all in their power for the welfare of our noble and beneficent calling. We are a band of brothers united in a common cause,

the undying warfare upon disease, a mutual struggle for the comfort, health, and life of the human family; and I devoutly trust that each and every member feels the importance of the interest of the occasion.

Gentlemen,—These are stirring times in our country; party feeling runs high and the people are excited; politics is the ruling topic of the hour; we all have our peculiar views, but they can not, they dare not, encroach on the sacred domain of medicine. The National Medical Association meets, and its members come from all parts of the country, and laying aside all other issues, they join hearts and hands in honorable, fraternal relation. We should follow the worthy example, that our endeavors may be auxiliary to the moral influence which proceeds from their assemblies, creating friendship and good will, and carrying sweet peace to all parts of our beloved and troubled land. So that when our work is done and life is ended, we can claim all the benefit of the precious promises: "Blessed are the peacemakers, for they shall be called the children of God."

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### ORIGINAL CORRESPONDENCE.

"Sit mihi Fas scribere, audita."

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TAYLORSVILLE, KY., 1876.

*Dr. E. S. Gaillard:*

Dear Sir,—In reviewing a most excellent journal, the "Baltimore Surgeon and Physician," my attention was called to an article, entitled "A New Mode of Taxis for Strangulated Hernia," by Prof. A. F. Erich, M. D. He gives a history of a case of strangulated inguinal hernia, in which he has very fortunately discovered something *entirely* new. The common mode of taxis, aided by the free administration of chloroform, etc., failed completely in his case. He then placed the patient on an inclined plain, 45°, heels in the air and head downwards (without regard to the polar axis), applying a bag of ice to the strictured parts, thereby succeeding in reducing this distressing malady.

He says he has consulted Drs. Gross, Erichsen, and four other eminent authors, without finding a syllable either directly or indirectly that hints at such a *modus operandi*. Now, far be it from me to pluck one feather from the beautiful plumage of my confrere, but I must be allowed, country doctor as I am, for my own gratification, if nothing more, to relate a circumstance which happened eighteen or nineteen years ago, whilst I was a first-course student, which I have never forgotten, and had use for more than once since during my practice. A case was brought before the clinic by Professor Gross—a case of inguinal hernia. All plans then in vogue were exhausted—taxis, chloroform, fomentation, etc., etc. It was then concluded that operation was a *sine qua non*, hence he was ordered to be carried up stairs preparatory for the sanguinary conflict. Through the awkwardness of the *wet nurses* (*goke*), one of these being so drunk his centre of gravity was questionable, the patient was carried up stairs by *foot presentation*. When all the necessary preparations for the wondering eyes of two hundred students were ready, to the utter astonishment and chagrin of Dr. Gross, for he wanted to operate, I saw it in him, the hernia was reduced and the patient relieved. Since that time, no doubt many others of the same class have remembered the circumstances, and heeding, acted accordingly.

I have had the fortune several times during my practice to attend similar cases of hernia, and had the gratification of seeing them speedily reduced, with the exception of Professor Erich's plan, by using warm fomentations accompanied with constant pressure, instead of ice. I invariably use a bran sack, or something analogous to it, warm as he can bear it, and have been rewarded with speedy reduction in every case, fortunately. I can not see the philosophy in using ice, as it certainly militates against the reduction by contracting the ring and surrounding muscles, whereas by applying warmth and pressure constantly, the adjacent parts become relaxed and give way, facilitating the return of the sack. Whilst "we (as 'Biles' says) have much to be thankful for," we thank the gentleman for his *novelle* plan of hernial treatment, but wish to offer the amendment of *warm fomentations*, instead of ice, before we'll accept.



No doubt the medical world will be obliged to Professor E. and *myself* for exhuming this great discovery; but it's capital, and we know it, as we have tried it, and as all writers, almost without exception, now begin their dissertations *qui docet discit*.

Yours, etc.,

J. W. SMITH, M. D.

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GONZALES Co., TEXAS, Feb. 28, 1877.

*Dr. E. S. Gaillard:*

Dear Doctor,—In the January number of the Journal, Dr. Forbes inquires if there is any remedy for inverted nipples. I have a lady under my care suffering from a like deformity, the nipples being turned *outside in*. This is her third pregnancy, and she has never been able to nurse her children. Any information which you will give me, either privately or in your Journal, will be a great favor. Your friend,

PATRICK HENRY, M. D.

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ADAMS STATION, TENN., Feb. 14, 1877.

*T. Curtis Smith, M. D., Middleport, Ohio:*

Dear Sir,—In a note to your article in the "Richmond and Louisville Medical Journal" of this month, you request a little information on green vomiting. I believe it to be the duty of every philanthropic physician to give to the world any beneficial information he may possess, and so I cheerfully comply.

CASE I.—When I was a youth of about eighteen, I had a severe bilious attack, and vomited up a large quantity of grass-green liquid. I had for several years suffered with chronic hepatitis and chronic diarrhoea. My attending physician (an able one) told me after recovery that it was the first case he ever saw recover after vomiting up such a large quantity of grass-green liquid. I can not recollect the amount, as it has been over twenty years.

CASE II.—Mrs. A. E., forty years of age, widow for fifteen years, mother of two living children, had suffered for a number of years with bronchitis and dyspepsia; had tried divers physicians and remedies. I had never treated her before. I found her suffering with great gastric irritability, and was vomiting up a quantity of thin, green liquid, and in spite of every rem-

edy I could devise, she continued to vomit up, I suppose, ten times as much liquid as she drank ; in fact, she ceased drinking only when taking her medicine. About thirty hours before death it assumed a dark, coffee-ground appearance, and twelve hours before death the vomiting ceased, and she complained of very great pain after swallowing anything liquid. I was of the opinion that she died of perforation of the stomach, not being able to account for her condition just before her death upon any other ground. I have never seen a similar case to hers and the one you describe, and I have no explanation to offer you. I was not allowed an autopsy, and so I was left in the dark to a certain extent. You can make any disposition of this you see proper.

Yours truly,

C. H. FORT, M. D.

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FARMERVILLE, LA., March 8, 1877.

*Dr. E. S. Gaillard:*

Dear Doctor,—Having been a regular subscriber to each of your valuable Journals, to the Monthly from my earliest membership with the Profession, and the Weekly, subsequently the Bi-Weekly, from its first issue, I have ever with pleasure perused their interesting pages, which afford a store-house of information, and I am amply remunerated for the small subscription fees demanded for them.

My object in this communication is to give you the details of a case of some interest, which came under my observation and treatment recently.

Mr. L., aged 24 years, of fair complexion, sandy hair, blue eyes, well developed, in short, a perfect man physically, was lodged in the parish prison about the 10th of January, charged with murder. I learned from his statement, and the attending physician also, that he had suffered and was still suffering with severe chilblain or frostbitten feet, caused from great exposure during a heavy snow, which we had about the 1st of January. The prisoner stated that he rode all night through snow from eighteen to twenty inches deep with tight boots. His feet became insensible to cold, and, calling at a house, an old lady advised him to immerse them in hot water, as hot as he could bear it. You will not be surprised when I state to you that I

found each foot in a gangrenous state, extending in right foot about one-half inch above the articulation of the phalanges and metatarsal bones; in the left a little higher up to about the middle of metatarsals. The parts involved were perfectly black and mummified; the lines of demarcation were well established; in fact, each was separating rapidly at line. I did not hesitate in giving my opinion that the imperative necessity and only alternative was a surgical procedure for each foot, to which the consent of the patient was not obtained until he was made to realize his critical condition. This caused a delay of about ten days. Immediately after getting his consent, he was chloroformed. I applied the Esmarch bandage to the right leg, and proceeded at once in the operation, assisted by Drs. Baine and Post. I made a curved incision on the dorsum to extend as near the line of separation as practical, dissected it up sufficiently to procure a good flap; made a similar incision and dissection below, and sawed through the metatarsal bones about three-fourths of an inch below the tarso-metatarsal articulation; my object was to leave as much stump as possible; again it was his last request before being chloroformed. I was particular to retract the flaps well with a bandage as protection, secured all bleeding vessels by ligatures and torsion.

The left foot I disarticulated at the tarso-metatarsal junction, securing a good flap above and below. After all oozing ceased I closed the wounds and applied carbolized cold water dressing, which after a few days was substituted by carbolized olive oil. Immediately after the patient aroused sufficiently from the chloroform to swallow, I gave him freely brandy and morphine, in order to guard him as much as possible against the shock, which was rather severe; continued treatment as long as there was any evidence of shock.

After thirty-six hours fever rose rapidly to 104° F. in axilla; gave him quinine, opiates, and the tincture of aconite, until a gradual reduction of fever. I must not forget to state that there was a slight return of gangrene, but this was easily managed, and did not injure the flaps seriously. About the sixth day I was summoned hastily to see the patient, with the information of hæmorrhage, which I stopped easily with plugs of

lint saturated in the tincture perchloride of iron. The patient continued to do well, and at the end of three weeks was able to make his escape from the sheriff and his comrade at night. He stole one of their horses and rode four miles to a railroad dépôt, and would have made sure his escape had not the train been a few minutes behind time.

If you consider these lines worthy of a place in your Journal, I would be pleased, I think, to see my first report of a case in print. I am truly yours,

F. C. MANNING, M. D.

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HEARNE, TEXAS, March 8, 1877.

*Dr. E. S. Gaillard:*

Dear Sir,—Noticing in the April number (1876) of your valuable Monthly a report of a case of infantile convulsions by Dr. W. B. Maxwell, of Nesbit, Miss., I shall briefly state that since I commenced the practice of medicine, two years ago, I have attended a large number of cases, some of which were, to all appearances, of the same character. I supposed, without any authority but my own observation, that the cause of the convulsions in these cases was due to an intense form of malarial poisoning, in view of the well-known tendency of infants to convulsions. This is not only an excitable period of life, but the immature nervous centres are exposed to a great many sources of irritation; in fact, not only malarial poisoning, but anything which rapidly depresses the nervous system or which interferes with the due performance of the functions of the nervous centres is likely to induce a fit of convulsions. As for instance, either an insufficient blood supply to the brain, as often occurs in badly fed or nourished children, or from impure blood, as in measles, variola, scarlatina, and renal disease, etc., or from distant irritation, as intestinal worms, dental irritation or indigestion; also general irritation, such as is produced by heat, cold, fright, and a host of other causes impossible to discover. It is argued by many and admitted by nearly all that anything that will produce delirium in an adult will in all probability bring about convulsions in an infant. In intensely malarial countries, where malarial hæmaturia, remittent and

intermittent fevers are rife, I think the convulsions of children are frequently produced by malarial poisoning. Being strongly impressed with this belief, and fortified by the fact that these convulsions, when present at all in this country, are in connection with malarial fevers, I have pursued the same general plan of treatment as in all malarial fevers; controlling the convulsions by chloroform inhalations, bromide of potassium, hydrate of chloral, the application of cold to the head and warm pediluvia. I have been very successful with this treatment, and if I am wrong, what I most desire is more light.

I remain truly yours,

H. H. DARR, M. D.

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GARRETSON'S LANDING, ARKANSAS RIVER, }  
 March 18, 1877. }

*Dr. E. S. Gaillard:*

Dear Sir,—In the March number of the "Richmond and Louisville Medical Journal" I see a series of remarks on "Malarial Hæmorrhagic Fever," by L. S. Joynes, M. D., of Richmond, Va. He does not give all the points as found in cases here. We call the disease swamp fever in this climate, but I am of opinion that the two are the same. We find that the patient has one or two chills; then his bowels are locked up; next his urine is tinged with blood, and continues to grow deeper until it looks very dark and bloody, and the most alarming thing here is, the urine is scant and in many cases ceases to flow entirely. The most powerful diuretics fail to restore to the kidneys their functions. The pathology of the disease is non-action of the kidneys, and when they do act they fail to perform their proper duty. The patient commences to look very yellow, and sometimes looks as though he had been rubbed all over with colorless iodine. The disease here is a new one, only about three or four years known, and most all cases die. My first year in the bottom was in 1876, and I lost but one case. She was a very old lady, taken suddenly ill. She was covered with black blotches, besides the uniform yellowness, characteristic of all the cases. The treatment I give is the one taught us by you in 1872 and 1873, which is to give quinine boldly, followed by an active cathartic with active

diuretics; after the patient has been thus promptly treated, I continue the use of the quinine. We find considerable nausea; this I control with morphia and creosote. This constitutes my treatment, together with plenty of nourishment, which has to be forced on the patient. One thing peculiar is that no negroes here ever have the fever. You are aware that we live in one of the worst kind of swamp countries, where cotton grows to perfection, and where the people all work for their living.

Respectfully, F. A. REMLEY, M. D.

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## CHEMISTRY AND PHARMACY.

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“Diruit, œdificat, mutat.”—Hoz.

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**Blue-Glass Science.**—There is nothing more reāssuring in these days, when new “isms” of the scientists are slowly sapping the foundations of cherished belief, than to remember that, after all, the much-vaunted dicta of Nature are yet opposable by the sound operations of honest common sense. See, for example, how one of our evening dailies, tossing the dogmas of so-called science contemptuously aside, evolves such profoundly original thoughts as these, to explain the lucid blue-glass theory of General Pleasanton: “The blue glass presents an obstruction to the sun’s rays which can only be penetrated by one of the seven primary rays—the blue ray; the remaining six rays, traveling with a velocity of 186,000 miles a second, falling upon the blue glass, are suddenly arrested; the impact evolves upon the surface of the glass friction, heat, electricity, magnetism; the heat expands the molecules of the glass, and a current of electricity and magnetism passes through it into the room; this current, falling upon animal or vegetable life within, stimulates it to unusual vigor. Certainly the results achieved, and abundantly certified to, are marvellous, and sufficient to provoke further experiments and inquiry.” “Prior to these splendid original discoveries of our contemporary,” says the “Scientific

American," "we ignorantly believed that blue glass only partly sifted out the orange and yellow rays from the spectrum, and that, with this exception, it acted merely as a screen to diminish the intensity of all the rays. We also supposed that there was a sharp distinction to be drawn between sunlight after passing through blue glass, and the blue spectral ray; that in one case all the colored rays were more or less present, and that in the other but one was. But think of the utter dismay of such pretenders as Helmholtz, Tyndall, and Henry, when they learn that the undulatory theory of light with which they have so long taxed our credulity is overthrown—that of the seven principal rays, six bounce off from blue glass and distribute themselves over the adjoining neighborhood. That the glass is heated by the impact, and as the sun persistently emits more rays, there are more impacts and more heat. The glass gets hotter and hotter; but—mark the scientific acumen here—just as we are wondering whether it will reach the melting point, the pores open. It is the Turkish bath of Nature. Electricity and magnetism, no longer shut out, rush in between the separate molecules. Hand in hand, these great curative powers seek a proper subject. They meet (we learn from a report, also in our contemporary, of Pleasanton's triumph) a pig, or a young lady whose hair has come out, a heifer, a rooster, or a rheumatic child. Forthwith the pig fattens, hair equal to that produced by the finest tricopherous pervades the female scalp, and unusual vigor and general happiness prevail. Such is the boon which Pleasanton bestows on humanity, as elucidated by the original genius of our contemporary."

**Invisible Ink for Postal Cards.**—The "Deutsche Illustrirte Gewerbezeitung" proposes the general use of what may be called "postal card ink," for messages which are sent on such cards, or otherwise unsealed. The advantage would be, that under ordinary circumstances the message would remain unknown to any but the person addressed, although everybody might employ the same ink and the same means for developing the writing; for, since it is unlikely that real confidential messages would be sent by open postal card, but few persons would

have inclination or time to develop the writing at the risk of being found out, and not finding out anything important themselves. Various liquids are proposed for this purpose. A solution of nitrate or chloride of cobalt, or chloride of copper, mixed with a little gum or sugar, produces a "magic ink," which is made visible by warming, either by holding against the stove or over a burning match.

**Chlorodyne (DR. OGDEN'S).**—℞. Chloroformi, f. ʒ vi; tinct. capsici f. ʒ ss; morph. hydrochlor grs. ix; acidi hydrocyan. (Scheele), m xvi; ol. menthæ pip, gtt. ij; acidi perchlor grs. xx; theriacæ, ʒ i. Mix. Add the chloroform last, well rubbing and shaking.—*Chicago Pharm.*

**Donovan's Solution (MODIFIED PROCESS).**—Arsenious acid, grs. vi; mercury, pure, grs. xvi; iodine, pure, grs. xij; alcohol, ʒ ss; distilled water, q. s. Rub together the arsenic, mercury, iodine and alcohol until a dry mass is obtained, and having triturated 8 ozs. of the water with this in successive portions, transfer the mixture to a flask, and heat till it begins to boil. When cooled and filtered, make it up to 8 fl. ozs. and 6 drachms with water.—*Chicago Pharm.*

**Award to Messrs. Billings, Clapp & Co., Boston.**—The undersigned, having examined the products herein described, respectfully recommend the same to the United States Centennial Commission for award, for the following reasons, namely: A very fine display of Chemicals, especially Carbohc Acid, Propylamine (Trimethylamine), Chloride of Propylamine, and also of Pharmaceutical Chemicals, such as Citrates of Iron and Quinia, Citrates of Iron and Manganese, Citrates of Bismuth and Ammonium, Pyrophosphate of Iron, Bromide of Potassium, Bromide of Ammonium, Chromic Acid, Valerianic Acid, and many others. Commended for fine display and excellence of chemicals.

F. A. Genth (Signature of the Judge).

Approval of Group of Judges—J. Lawrence Smith, P. De Wilde, E. Paterno, F. Kuhlman, Dr. V. Wagner, Charles A. Joy, J. W. Mallet.



## REVIEWS AND BIBLIOGRAPHICAL NOTICES.

"Judex damnatur cum nocens absolvitur."

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*A Hand-Book of Therapeutics.* By SYDNEY RINGER, M. D., Professor of Therapeutics in University College, Physician to University College Hospital. Third Edition. New York: Wm. Wood & Co. A Book of 576 pages; Cloth.

It is, as its name implies, a hand-book of therapeutics; not a treatise on materia medica. "A hand-book" because it is compact and convenient in form, and brief in its statement of facts, and not embracing the whole field of medicines; "of therapeutics" because it only comprehends the remedial action and application of the agents named therein, and says but little of their histories or physical properties.

The book is very useful to practitioners, and not so much so to students.

The author says in his preface to the second edition: "In preparing a new edition of his hand-book—specially intended for students and young practitioners—the author has endeavored to make his work as practical as possible." \* \* \* \*  
 "Therefore he has been content to state the symptom or group of symptoms which may suggest a remedy, and to indicate the way of administering it, and as a rule, he has omitted the various speculative explanations concerning the mode in which medicines effect a cure."

In commenting on the above, I would note (1) that the work, in my opinion, is not one so well suited to the student, unless it be advanced students, because there is an absence of much that students should know, and the discussion of mooted points in therapeutics about which students know but little. (2) The work is practical, and therein consists its great value. Dr. Ringer has drawn from his vast experience acquired as a long-time physician to University College Hospital and in a large private practice, and has, with apparently commendable candor, set forth what he has there observed in the application to disease of the medicinal agents treated of in this book. (3). There is something that smacks of homœopathy in the phrase, "group

of symptoms which may suggest a medicine"; and there are other things which, at first blush, have the same semblance to be found elsewhere in this book, such as drop-doses of wine of ipecac for the cure of nausea, and the exhibition of mineral acids for the cure of sour stomach. I see nothing to object to in this, but rather to commend; not that it runs parallel with the teaching of the pretentious humbuggery of homoeopathy, but because it shows that the author is a manly and candid observer, and has, in a true spirit, endeavored to add to our knowledge of the "therapeutic art." The quicker we learn to forever bury the word "allopath"—and it has already been decently interred by us, but is galvanized by the modern "pathies" to scare the timid—and to recognize the "regular medicine" of to-day as a true eclecticism, the better we will understand the true status of our profession.

The application of medicines to the relief of disease is an art based alone on empiricism. There is no guessing even as to what effect will be produced by a new medicinal agent upon the human body, experience alone teaches us its properties. I would not be understood as saying now a word against the science of medicine; for medicine is a profound science; a great and beautiful philosophy. Let us take a hasty glance over the *materia medica*. What convinced us of the value of *colchicum* in the treatment of rheumatism? Was it not because it was surmised to be the active constituent in the popular nostrum, "*Eau Medicinal d'Husson*?" Who first taught us the value of the pure bitter quassia? Was it not successfully used by old Quassi, of Surinam? Think of *cinchona* Jesuit's bark. What is more precious than its great alkaloid quinine? The Jesuit priests, in their propagation of Christianity among the savages, found it in use by them for the cure of fevers, and under the patronage of the illustrious Duchess of Cinchon, the faculty of Europe were induced to take hold of it; its name attests its history. It is not necessary to proceed farther with this investigation. The whole of therapeutics is made up, with a few exceptions, of the administration of medicines whose properties have been taught us by experience before any idea of their value was formed. We except the valerianate of zinc, suggested by Louis

Lucien Bonaparte, who was not a physician, and chloral hydrate and its congeners, made by Liebrich, and a few other medicines. The arsenical paste of Frère Come was once the most useful of the arsenical caustics.

There is no guide as to the probable effect of medicinal agents other than the actual test of experience. In the vegetable kingdom belonging to the same botanical family is not a safe guide. Does not the Irish potato belong to the Solanacæ as well as the *Solanum Dulcamara* (bitter sweet)? The best guide to the ancient physicians in forming their therapeutics was the physical resemblance which substances bore to internal organs; the orchidians were useful in affections of the testicles; and so with those resembling the liver and the kidneys. But these proved as fallacious as all other guides, and medicine gradually became as it is to-day, a true eclecticism, based on experience or a rational empiricism; taking the proven good wherever found. Do we not utilize the hydropath's cold bath and wet pack? Is not the thermo-therapea, Turko-Russian bath, somewhat allied to Thompsonianism? And do we not use lobelia and No. 6 in numerous instances in our daily practice? We use the galvanism of the electrician; the hydrastin of the botanical, with his other gum resins, though they are not of much value.

We have learned much from the homeöopath; his pharmaceutical confectionery has been useful to us; the drugs of to-day, as seen in the elegant elixirs and the beautiful sugar-coated pills of our drug-stores, are more attractive to the senses and less nauseous and repulsive than ever before. So modern regular medicine is not Bourbonish, "learning nothing, forgetting nothing," but is wide awake, observant, and teachable.

The author says he has "followed Buchcheien's arrangement in describing the action of medicines; and in tracing the behavior of any drug, its effect on the body is noted in the following order: The skin, the mouth, the stomach, the intestines, the blood, the remaining organs, and finally the elimination of the medicine from the system."

There are only one hundred and eighty-eight medicinal agents treated of in the work, and none of the new medicines,

which of late years have gained a foothold in therapeutics, are treated of, except perhaps guarana. The "therapeutics of belladonna" take up nineteen pages; "digitalis and its preparations," fourteen; "opium and its preparations," thirteen; "chloroform," fifteen; and "alcohol," thirteen pages.

Dr. Ringer groups his medicines for description according to their effects; for instance, the sulphides of potassium, sodium, ammonium, and calcium are treated of together; chlorine gas, chlorine water, chlorinated soda, and chlorinated lime and their solutions in the same chapter; the same way with the bromides of potassium, sodium, ammonium, and lithium; the acids are grouped together, and the volatile oils, twenty-six of them.

It would be impossible, in a review like this, to criticise all that is striking or new to be found in this book. It is a valuable contribution to therapeutics, and will well repay perusal by every practitioner of medicine in the land.

I will bring out some few points that will be of value to the reader, and at the same time illustrate the style of the author. On page 103 he teaches the following with regard to the action of "acids," agreeing with Thomas King Chambers: "Acids, as we have seen, will check or lessen the secretion of gastric juice. In many stomach diseases, or from sympathy with distant organs, the follicles pour an excess of acid into the stomach, which undue secretion may be checked by the administration of acids shortly before food is taken. But acidity of the stomach is often owing to excessive or irregular fermentation leading to the production of a large quantity of various acids, as acetic, butyric, and lactic. This excessive or irregular fermentation of acids is itself checked by acids, and as either undue secretion of the gastric juice or excessive formation of acids by fermentation are the two causes of acidity, we have in acids themselves remedies able to control and check acidity of the stomach and relieve the distressing symptoms accompanying this condition, whether due to pregnancy, uterine disease, calculus of the kidneys, the various dyspepsias, or more serious disease of the stomach.

"Practical men know well that the administration of acid checks acidity, removing the acid eructations, the heartburn,

and the sense of discomfort at the chest and epigastrium, arising from excess of acid in the stomach.

"Hydrochloric or nitric acid is generally preferred, and small medicinal doses, separately or combined, are ordinarily sufficient, provided the prescribed conditions are complied with."

Now, it is to be understood that this acid treatment, like all other treatment, is to be used with discretion. An acid given on an empty stomach half an hour before eating may prevent an undue acidity of the chymous mass; but "acids given soon after a meal to patients troubled with acidity and heartburn greatly aggravate their sufferings. It is adding fuel to fire."

On page 355 we find: "Few remedies are so efficacious in checking some kinds of vomiting as ipecacuanha. The author, in numerous instances, has witnessed the efficacy of the wine administered in drop-doses every hour or three times a day, according to the urgency of the case, in checking the following kinds of sickness: 1. It will check the vomiting of pregnancy. \* \* \* 2. The vomiting of suckling mothers. \* \* \* 3. The vomiting of the menstrual period. \* \* \* 4. The morning vomiting of drunkards; but this morbid state can be more effectually controlled by arsenic. \* \* \* 5. The morning vomiting \* \* \* in convalescents from acute diseases. 6. Ipecacuanha will control at once the vomiting in children with acute catarrh of the stomach. Indeed, this remedy appears to have a greater influence over the vomiting of children than over that of adults. 7. Ipecacuanha often removes or lessens the vomiting of whooping-cough. \* \* \* 8. A species of vomiting after meals." \* \* \*

With regard to chloroform, the author holds the following language on page 306, which I would like to fully impress upon your readers. It contains a great truth and a proper warning: "In dental operations the patient incurs some additional risk of syncope, owing to his sitting posture. Chloroform should be forbidden in dentistry."

On page 302 we find: "The way in which chloroform destroys life is not yet well worked out, and much uncertainty still remains concerning its action on the heart."

Again, on page 306: "Are there any conditions of age or

health which forbid the use of chloroform as an anæsthetic? Provided due care is observed, the author thinks it may be given to all persons irrespective of their condition."

His section on belladonna is very interesting and instructive. It brings out a greater usefulness of this drug than most practitioners are aware of. I can merely allude to two points: (1) The antagonism of opium and belladonna, and (2) the utility of belladonna in night sweats.

On page 449 the following occurs: "Amid all this diversity of opinion, it must be admitted that on the subject of this antagonism more proof is needed. But while there is room for doubt concerning the antagonism between opium and belladonna, the interesting experiments of Fraser have demonstrated beyond question that atropia is an antidote to physostigma."

On page 436 he says that "belladonna will not only arrest the secretion of milk, but the secretion of perspiration."

I do not think this latter fact is generally appreciated by the Profession. It is in my experience the most valuable agent we have for the relief of the night-sweats of phthisis. Fifteen to twenty drops of the tincture of belladonna given in water at bedtime, or three hours before the expected sweat, will promptly arrest these sweats; and it is a great point gained when we stop this drain. Sweat is a secretion and not a mere transudation, and is very exhaustive to the consumptive. This excessive glandular action is arrested by belladonna. There have been in the cases in which I have used it no bad effects whatever in the above dose. But it would be too tedious to allude to all the interesting and instructive points in this very instructive little volume.

In the back part of the book is a treatise "On Poultices and Hot Fomentations"; a section "On Enemata"; "A Posological Table"; "A Dietary for Invalids"; and "An Index of Diseases," arranged alphabetically, with a list of the remedies most commonly used in their treatment. This will serve as a very useful hint to a practitioner when about "at the end of his row" in the treatment of any obstinate case of sickness.

B. H. R.

**A COURSE OF PRACTICAL HISTOLOGY—Being an Introduction to the Use of the Microscope.** By Edward Albert Schafer, Assistant Professor of Physiology in University College, London. With Illustrations on Wood. Philadelphia. Henry C. Lea. 1877.

**THE PRACTITIONERS HANDBOOK OF TREATMENT; OR, THE PRINCIPLES OF THERAPEUTICS.** By J. Milner Fothergill, M. D., Member of the Royal College of Physicians of London; Assistant Physician to the West London Hospital. Philadelphia. Henry C. Lea. 1877.

**A DIRECTORY FOR THE DISSECTION OF THE HUMAN BODY.** By John Cleland, M. D., F. R. S., Professor of Anatomy and Physiology in Queen's College, Galway. Philadelphia. Henry C. Lea. 1877.

**THE TONIC TREATMENT OF SYPHILIS.** By E. L. Keyes, A. M., M. D., Adjunct Professor of Surgery and Professor of Dermatology in the Bellevue Hospital Medical College; Surgeon to the Bellevue Hospital; Consulting Surgeon to the Charity Hospital; Consulting Dermatologist to the Bellevue Bureau of Out-Door Relief, etc. New York. D. Appleton and Company, 549 and 551 Broadway. 1877.

**ON THE IMPORTANCE OF THE UTERINE EBB AS A FACTOR IN PELVIC SURGERY.** By Horatio R. Storer, M. D., of Boston, U. S., former Vice-President of the American Medical Association, and member of the Medico-Chirurgical and Obstetrical Societies of Edinburgh. Printed from the "Edinburgh Medical Journal," for February, 1877. Edinburgh. Oliver & Boyd, Tweeddale Court. 1877.

**PNEUMATIC PRESSURE AND THE GENU-PECTORAL POSTURE IN THE REDUCTION OF UTERINE LUXATIONS.** By A. Sibley Campbell, M. D. New York. William Wood & Co., Great Jones Street. 1877.

**THE TRANSACTIONS OF THE AMERICAN MEDICAL ASSOCIATION.** Instituted 1847. Volume XXVII. Philadelphia. Printed for the Association. Collins, printer, 705 Jayne Street. 1876.

SEVENTH ANNUAL REPORT ON THE NEW YORK OPHTHALMIC AND AURAL INSTITUTE, 46 East Twelfth Street, near Broadway. For the year beginning January 1st, 1876, and ending December 31st, 1876. The Dispensary is open daily (Sundays excepted), from 2 to 3½ o'clock. New York. Industrial School of the Hebrew Orphan Asylum Steam Printing Office. 1877.

PROCEEDINGS OF THE CONFERENCE OF CHARITIES, held in connection with the General Meeting of the American Social Science Association, at Saratoga, September, 1876. Printed for the Conference by Joel Munsell. Albany, N. Y. December, 1876.

SECOND ANNUAL REPORT OF THE BOARD OF HEALTH OF THE STATE OF GEORGIA FOR 1876. Atlanta, Ga. James P. Harrison, State Printer. 1877.

COLLEGE OF PHYSICIANS AND SURGEONS, New York. Medical Department of Columbia College. Seventh Annual Catalogue and Announcement. New York. 1877.

THE USE OF UTERINE SUPPORTERS. By Clifton E. Wing, M. D., Boston. 1877.

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## MISCELLANEOUS.

"Non omnes eadem mirantur ament que."

**Butterine.**—At a recent meeting of the Scottish Society of Arts, Dr. Stevenson Macadam read a paper on butterine, and showed samples of the substance, both pure and mixed with butter. The high and increasing price of butter, he remarked, had lately stimulated manufacturers in this and other countries to make a wholesome article which should be suitable in taste and nutritious qualities as a substitute for butter. The original or raw material now used was the best ox-suet, which was taken in a thoroughly fresh state, and, the membranous parts being cut away, was gently heated in a steam-pan until the finer and purer part of the fat was liquefied. This was then run off, and while still warm was skimmed repeatedly, and there-



after allowed to cool. The semi-solid fat thus obtained was pressed through bags for further purification, after which it was churned with some milk, and kneaded and salted in the usual way. In chemical properties, the butterine which was thus obtained was almost identical with ordinary butter, the only difference being a few per cent. of volatile fatty acids forming butyrine in the true butter. Fully 90 per cent. of both butter and butterine consisted of the more liquid fats which were common to both; in fact, the butter was practically the animal fat which the cow had passed through the udder in the milk from which it was manufactured, and the butterine was the finer part of the animal fat which the ox had stored up in the suet from which it was manufactured. The two fats were equally cleanly and wholesome, and when put on its proper footing as a substitute for butter, the butterine was a legitimate article of trade, and would prove a great boon to consumers who did not care to pay famine prices, and who could be supplied with a substance almost identical with butter in chemical nature, and combined with wholesome and nutritious properties.—*Brit. Med. Jour.*

**Moderate Drinking.**—There is a difficulty in defining “moderate” drinking, as Sir Henry Thompesson said. And it is almost equally difficult to be moderate in speaking about this subject, though we are convinced that medical men will do good in proportion as their speech is judicial and scientific. We doubt whether it is right to say that moderate drinking is the parent of excessive drinking. But what is moderate drinking? We can best get a notion of it by saying what it is not. Drinking early in the day is not consistent with moderate drinking. The man who begins the day with “a soda-and-brandy” has very little respect for his constitution; and if he does not alter his habits they will alter his health. Odd glasses of beer and glasses of spirit in a forenoon do not come within the range of moderate drinking. They will show themselves in some rotundity of feature or figure, or alteration of color, some dyspepsia, or lithiasis, or rheumatism. That is not moderate drinking which adds fifteen or twenty beats to the pulse, or which

flushes the face. Finally, all casual drinking is bad, presumably, and not moderate drinking. The system will not receive food merely as a matter of conviviality at all sorts of odd hours. Still less will it receive with impunity drink in this way. Drinking which disturbs sleep, either by making it heavy, or by driving it away, is not moderate. For want of thought on these points many people who would be shocked to be considered immoderate charge their blood and tissues with drink so continuously that the system, though never saturated with, is never free from, alcohol. Moderate drinking is that which consists with a clean tongue, a good appetite, a slow pulse, a cool skin, a clear head, a steady hand, good walking power and light refreshing sleep. It is associated with meals, and is entirely subordinated to more convenient and less objectionable forms of food.—*Lancet*.

**Evolution of the Brain.**—A course of lectures arranged by the Glasgow Science Association, says the "British Medical Journal," was terminated on February 15th with a lecture by Professor Allen Thomson on the Evolution of the Brain. At the conclusion, he stated that he was inclined to accept the Darwinian theory, that the brain had been gradually assuming, in the long succession of ages and under the variations of hereditary transmission, the complex structure and lofty powers which it exhibits in the now existing condition of man.

**Nitric Acid for Hoarseness.**—Dr. W. Handsell Griffiths says that a few drops of nitric acid in a glass of sweetened water, a couple of times daily, will be found an excellent remedy for the hoarseness of singers. One of the largest fees ever received by him, so he says, was for this prescription.

**Something New—Digestine.**—A. F. Shelly, M. D., of Philadelphia, writing to the "Medical and Surgical Reporter," says: This is obtained from the gizzard of the domestic fowl (chicken), and is a specific for vomiting in pregnancy. I have used this remedy for twenty-five years, and it has never failed. It is

also the most powerful and reliable remedy for the cure of indigestion (dyspepsia), and sick stomach caused from debility of that organ. It is useful in all cases where the pepsines and pancreatines are used, but with much more certainty of its good results, for it puts all those preparations, in my experience, in the background.

In complicated affections of the stomach, such as inflammation, gastralgia, pyrosis, etc., it may be combined with subnitrate of bismuth and opiates; and in diarrhoea and cholera infantum, with astringents, both vegetable and mineral. I have given the article to several prominent physicians, who have used it with the happiest results, among whom I may mention Professor E. Wallace, of the Jefferson Medical College; He gives me the result of seventeen cases as follows: In vomiting of pregnancy, out of nine cases he cured six, and palliated two, in one case the remedy was not taken according to direction and therefore had no effect. He used it in seven cases of sick stomach caused by chronic inflammation of the uterus; cured five and two remained doubtful. He also used it in a case of very obstinate sick stomach, caused by an irreducible hernia, and says this was the only remedy that gave any relief.

We who have some experience all know that vomiting of pregnancy is a sore affliction, and in some cases almost unendurable, nay, indeed putting life in jeopardy; but in digestine we have a remedy which will prove to be a great blessing to mothers, who as yet think vomiting must be endured as a natural consequence.

If I am able by this publication to induce the medical fraternity to make use of the remedy, I am positive that a great boon will be conferred upon a class of sufferers who claim our sympathy.

The dose is from five to ten grains, hardly ever more than five, except in obstinate cases. For children from one to five grains. My mode of administering it is in a spoonful of water or tea, or it may be strewn on a piece of bread and covered over with a little butter; it is, however, nearly tasteless. In dyspepsia and in vomiting of pregnancy, I direct it to be taken half an hour or so before each meal. In other affections of the

stomach and bowels, every two to four hours. I give it uncombined, except in complicated cases, as heretofore mentioned.

The methods by which this principle can be obtained from the viscus are various. When I commenced to employ it, I used it in rather a crude state by pulverizing the lining membrane of the gizzard; but it requires too much care and precision in the drying and cleansing operation in order not to destroy its virtues. There is also great inconvenience in obtaining the viscus during the heat of summer and extreme cold of winter, as temperature is one of the main things to be observed, in order to preserve its efficacy, purity and sweetness. Later, finding this mode of preparation unsatisfactory and inconvenient for the above reasons, I consulted with Wm. R. Warner & Co., 1228 Market street, Philadelphia, who have prepared a form designated digestine; its purity and also its good effects I can vouch for.

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## M E D I C A L N E W S .

'Nulla dies sine linea.'

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*Titles and Quacks in Paris.*—At a meeting of the Society of Surgery of Paris on January 31, M. Le Fort presented a patient with cancer of the right breast, who had suffered considerably under the treatment of a Count Charles De Bruc, described as "Doctor of the Faculties of Paris, London, Geneva, and Modena; Member of the Medical Institute of Paris, and Director for ten years of the "Gazette Medicale des Familles," a journal for patients affected with rebellious and incurable diseases; inventor of an elixir curative of cancer." Count De Bruc had passed no examination at Paris, but had been authorized by Napoleon the Third to practice medicine there.—*Brit. Med. Jour.*—*Dr. Marion Sims.*—At a meeting of the Obstetrical Society of Dublin, says the "British Medical Journal," Dr. Marion Sims was elected an honorary member of the Society. Dr. Sims was proposed in very complimentary terms by Dr. Kidd, President of the Royal College of Surgeons, and

seconded by Dr. Lombe Athill, Master of the Rotunda Lying-in Hospital.—*University of Vermont, Medical Department, at Burlington, Vermont.*—Miss Fletcher, of Burlington, has recently donated \$75,000 for the building of a hospital, and \$100,000 for the endowment of the same. The hospital will be the first institution of that kind in that State. This will give an opportunity for clinical study in connection with the college course not enjoyed by similar institutions outside of large cities.

—A committee, consisting of Drs. Schröder, Böhr, Fasbender, Löhlein, and Martin, has been appointed by the Obstetrical and Gynæcological Society of Berlin to investigate the etiology and prevention of puerperal fever in that city.—At the last meeting of the Royal College of Physicians of London, Dr. Sieveking announced that he had discovered some very interesting manuscripts of Harvey, of which he will give an account in his forthcoming Harveian Oration.—*Honors.*—Sir James Paget has been appointed Sergeant-Surgeon to the Queen, in succession to the late Sir William Fergusson. The two Sergeant-Surgeons to the Queen are Sir James Paget and Mr. Cæsar Hawkins. The office of Sergeant-Surgeon Extraordinary to the Queen is not a formal part of the Royal Household, but was created originally, we believe, for Mr. Keate, and was subsequently filled by Sir James Paget, in recognition of his special services. Some doubt, we believe, was therefore felt as to the advisability of filling up the vacancy; but on this occasion also, after some hesitation on the score of precedent, it has been graciously decided by the Queen to recognize the services of Mr. Prescott Hewett to the Royal Family, and his eminent surgical position, by appointing him to fill the post vacated by the promotion of Sir James Paget. Mr. Prescott Hewett is, therefore, gazetted Sergeant-Surgeon Extraordinary to the Queen. The appointment is one which, we feel assured, will be ratified by the general voice of the Profession as a just compliment to Mr. Prescott Hewett's eminent official and surgical position. The opportunity also has been taken to pay a just compliment to Mr. Erichsen, who has long held a position in the surgical world which would have justified his receiving some mark of Royal favor and public distinction. He has been

appointed Surgeon-Extraordinary to the Queen. University College Hospital can now boast of having on its staff four members who hold high Court appointments, while more than one of its junior alumni have also had the opportunity of doing service to the Royal Family of England.—*Brit. Med. Jour.*—*A New Poison.*—At the meeting of the Academy of Sciences of the 7th February, says the "British Medical Journal," a new poison was presented by M. Vulpian for MM. Ernest Hardy and Gallois. It is named inea, and is a heart-poison, already studied in France by MM. Polailon and Carville, and in England by Dr. Fraser. Like digitaline, but in a stronger degree, it kills frogs and other animals, the heart being in systole. The discoverers scarcely know as yet how to class it, but they are convinced that it is not an alkaloid.

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### IN MEMORIAM.

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The many friends and admirers of Dr. B. M. WIBLE, of Louisville, Ky., will be pained to learn of his death, which occurred March 26, 1877. He had been "feeling badly" for several months. Four months since he found his vision disturbed. His renal secretion was examined and albumen found to be abundantly present. Complaining now of his heart, this organ was also examined and found to be valvularly impaired. A case of chronic Bright's disease, with its complications, was found to be fully developed. These facts proved to be a shock to himself and to his medical friends. He was at once placed under treatment. For a time he responded, but this period was brief indeed. Soon evidences of gastric debility and involvement were apparent. In January food taken was soon ejected, and there was at such times a distinct and peculiar odor manifested. It was evident that urea was being eliminated by the stomach. This trouble slowly but progressively increased, and now every kind of food taken was soon ejected. Albumen was being largely withdrawn from the blood, while food of all kinds was ejected almost as soon as it was taken into the stomach. To the medical mind, nothing more need be said. The strength of the blood was being sapped while the digestion of food of every kind was impossible. The result of such a condition was speedily manifested. Inanition was indeed soon complete. The end was merely a question of endurance and time; and to one long past the meridian of life the result could not be long delayed. Early in March the evidences of asthenia became more manifest. These quickly and progressively increased, and on March 26 the great change came; the change from life to death. With-

out a struggle, without coma, without convulsions, without any of the horrors which represent the complications of Bright's disease, the distinguished patient quietly passed to death; the most merciful, the least painful of all the deaths to have been anticipated.

Dr. Benjamin Miller Wible was born in Nelson county, Ky., August 13, 1814. Hereceived his literary education in this State, and graduated in medicine at the Ohio Medical College, Cincinnati, 1834. Practiced first (1836) at Mt. Washington, Bullitt county, Ky.; moved next (1839) to Shepherdsville, and after being there one year returned to Mt. Washington. In 1847 he removed to Louisville, Ky., and in that year went as surgeon of a Kentucky brigade to Mexico. After the Mexican war he returned to Louisville, practicing here until 1861, when as surgeon he entered the Confederate army. His commission bears date July 19, 1861. His first duty was as surgeon of the Second Kentucky Regiment. He secured here the warmest personal and professional commendation. He next was placed in charge of the Hess Hospital at Bowling Green, Ky., and soon afterwards made Medical Director of the Central Army of Kentucky. Taking after this charge of the sick of his own regiment, which had been ordered to Fort Donelson, he succeeded in sending them safely to Nashville, Tenn. Reporting to General A. S. Johnston at Murfreesboro, he was made Post Surgeon at Huntsville, Alabama, and rendered valuable aid to the wounded at Shiloh. He served as Medical Inspector at Corinth; then as Post Surgeon at Brooksville, Miss.; then at Tunnel Hill, Ga.; next at Forsyth, Ga.; and after this became Post Surgeon at Newnan, Ga. He received here the wounded of the raiding column of McCook and Brownlow, and cared for them. He served afterwards at Fort Valley and Americus, Ga., organizing hospitals and taking charge of them. Lastly, he was ordered to organize hospitals at Cuthbert, Ga. These hospitals were for unhealed wounds and deformities, and they were placed under his especial charge. He did valuable service, and remained here until the close of the war. In November, 1864, he married Miss M. C. Brown, daughter of Dempsey Brown, of Houston county, Ga. When the war ended, he repaired to the estate of his wife, where he planted and practiced until March, 1866, when he removed to his old home, Louisville, Ky., remaining here actively engaged in practice until the commencement of the illness which terminated his life. As a man Dr. Wible was remarkable; never was there one truer, purer, braver, more noble. As a physician, he was distinguished for his eminent culture, energy, and success. He was a close student and was well prepared in the different departments of his Profession. He was always personally kind, generous, and just, and preëminently devoted to those confided to his care. He lived without enemies, and died deeply mourned by sincere and devoted friends.

His last illness was a most painful one, but he bore it with beautiful fortitude. From the commencement to its close, he received unremitting attention from large numbers of professional and unprofessional friends, and the most constant kindness from an untiring and devoted wife.

The memorial meeting was one of the largest ever held in Kentucky. The distinguished dead now sleeps at Cave Hill, that beautiful suburban home of the dead, near the city, and in the State whose people he loved so well.

E. S. G.

## EDITORIAL.

“Nullius addictus jurare in verba magistri.”—Hoz.

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 Editorial Brevities.

In medical as in military history, how often it happens that one dies just as he achieves one of his greatest triumphs! Just as Gardon Buck, one of the best surgeons of his day, was rejoicing over the pæans sung by the Press over his excellent work on Reparative Surgery, the Profession are called upon to lament his death. He was born in New York in 1807, and was there educated. In 1830 he graduated at the College of Physicians, N. Y. He practiced there from the first to the last day of his professional labors; there he won all of his honors, and there he wore them well. Essentially he was one of the great surgeons of New York. After a half century of practice he died, at the ripe age of seventy. His works will long live after him.—M. Dolbeau has been trying recently some very interesting experiments as to the practicability of chloroforming those who are asleep without causing an interruption, partial or complete, of the slumbers. His results are curious; with adults he was uniformly unsuccessful; with children he succeeded without difficulty. The results of these experiments will, it is hoped, enable physicians to expose the frequent, silly stories, so commonly believed, of crime having been committed after narcotism from chloroform had been completed. In such cases the chloroformed party may often be an accessory to the crime. Who has any experience or testimony to offer on this subject?—It is stated that the Epileptic Hospital on Blackwell's Island, N. Y., consists of one-story pavilions without cellars. These are erected on made-land, where a marsh has been reclaimed by the deposit of garbage. It is said that four female patients have died suddenly from the results of the surrounding miasm.—The “Syracuse Herald,” published by the Syracuse University, is advertising the College of Physicians and Surgeons, New York, in a manner not at all pleasant or profitable to that Institution. *Audi alterem partem.*—The “Buffalo Medical and Surgical



Journal," after a suspension of several months, is again published. It is welcomed back with pleasure, and now with the aid of its former excellent editor, Miner (who tried to retire from arduous duty), the work will be handsomely sustained. —Langenbeck says that the cases of sub-periosteal resection by Dr. James R. Wood, New York, are unequalled in surgery; at the request of Langenbeck, the specimens have been sent to him at the meeting of the Medical Congress.—Just as the last sheets of this number are sent to Press the Kentucky State Medical Society convenes. Its proceedings will be found in the next issue. The attendance is much better than usual. The first day (when this notice is written) has been given up chiefly to organization, reports of committees, and the formation of committees for new work. The speech of the President, Dr. R. W. Gaines, of Hopkinsville, was delivered on the evening of the first day. It is a carefully prepared and commendable paper, and does him great credit. A material portion of it was given up to recommending the creation of a State Medical Examining Board, wholly disassociated from all medical colleges. This subject has been so often discussed in this Journal and in the Bi-Weekly that no further comments need be added. It is a pleasure to find that the President of the chief Medical Society of the State so warmly endorses and sustains it.

Douglas Jerrold and the Doctors.—When Jerrold was applied to for money in behalf of one who was constantly applying for money, he asked: "Well, how much does he wish now?" The answer was: "A five and two naughts will be sufficient." "Well," said the wit, "put me down for one of the naughts." This witticism seems to have been practically adopted by the subscribers. When asked for a 5 and two 00 each one contributes an 0. This may be good wit, but not the kind of wit that one lives by; like all jokes, it does not improve with repetition. The call is now again for 5 and 00. It is suggested that each reader abandon the joke of Jerrold, and feel assured that his act will be much enjoyed by all parties.

RICHMOND AND LOUISVILLE

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## ORIGINAL COMMUNICATIONS.

“Qui docet discit.”

ART. I. — *Report of Pott's Disease, or Caries of the Spine—Treated by Extension and the Plaster of Paris Bandage.\**  
By LEWIS A. SAYRE, M. D., Professor of Orthopedic Surgery in Bellevue Hospital Medical College, etc., etc.

Mr. Chairman and Gentlemen,—The chief object of this paper is to bring forward some practical facts with reference to a new method of treating Pott's disease of the spine, which I have exclusively employed since November, 1874. As you may be aware, I have adopted a plan of treatment which consists in completely encasing the body in a plaster of Paris jacket, and I have adopted it to the exclusion of all others for the treatment of this affection. Before proceeding, however, with the detailed account of how the jacket should be applied, I believe that it will not be unprofitable, inasmuch as I entertain views which are somewhat at variance with those held by the Profession in general concerning the nature of this affection, to briefly review its pathology, etiology, and symptoms, and the method of examining the patient.

First, then, with regard to its pathology. For many years I have held that posterior angular curvature of the spine, in common with other joint diseases, is essentially a traumatic affection. That the nutrition of the bodies of the vertebræ, and the inter-

\* Most of this article first appeared in the Transactions of the American Medical Association, but a portion of it has never been published, and now appears with illustrations for the first time.—E. S. G.

vertebral cartilages, becomes sufficiently disturbed in consequence of some injury to give rise to inflammatory softening and disintegration. That although it frequently occurs in persons having a tuberculous diathesis, even then it requires traumatism for its development. The view that Pott's disease is essentially of strumous origin I have long ago discarded. A very much slighter injury, however, may develop the disease in a patient having tuberculous tendencies than in a person having a vigorous, sound constitution, but even in the tuberculous patient I believe that when the spinal affection is developed, it depends, in a great majority of cases, if not in all, upon some concussion or blow or other injury; in other words, that it is of traumatic origin.

*Causes.*—The most common causes are concussions and blows received in a manner which brings either the heads of the ribs in forcible contact with their articular facets, or forces the bodies of the vertebræ into traumatic apposition with their intervertebral disks. Sometimes such injury passes entirely unrecognized by either the patient, his parents, or his friends. And the fact of having received an injury, such as a fall or a blow, some time prior to the development of the disease, is recollected only after the most careful cross-examination. The injury received, inflammation follows, and in due process of time the disease becomes fully developed.

*Symptoms.*—It may seem like consuming time unnecessarily to make any reference whatever to the symptoms of a disease characterized by so striking a deformity as is Pott's disease, yet so many cases have fallen under my observation in which the real condition has passed unrecognized until the "knuckle" in the spine could be seen, thereby rendering diagnosis easy and unmistakable, that I may be pardoned for directing attention to the symptoms of the affection in its very earliest stage. These are sometimes exceedingly obscure. The earliest symptoms of a diseased process affecting the bony structure in the neighborhood of the foramina through which the spinal nerves make their exit are manifested at the distal extremities of the nerves involved. For example, when the disease affects the cervical vertebræ, the patient may complain of a sense of constrict-

tion about the neck, dysphagia, irritation of the larynx, with hacking cough, pain in the chest, etc., for a long time before any deformity can be detected by the most careful inspection of the spinous processes. Such symptoms, therefore, are always sufficient to arouse suspicion, and should lead the surgeon to make diligent search concerning every possible condition which may give rise to them, and if disease of the lungs, larynx, and throat can be excluded, the suspicion regarding the presence of disease of the spine will be greatly strengthened. So also when the disease is situated in the dorsal region, the only symptoms of which the patient complains may be a sense of constriction about the body, indigestion, pain in the chest, pain or uneasiness about the heart, etc. And it may be found upon inquiry that he has been treated for heart disease, rheumatism, dyspepsia, and the like. As we descend in the spinal column, the earliest symptoms may be referred chiefly to the abdomen, about which there may be a sense of constriction, the patient may suffer from flatulence and constipation. And a very common diagnosis in such cases is that of worms. When the disease is developed at a yet lower point, the bladder and rectum may first announce its presence, and perhaps the chief symptom of which the patient complains will be a frequent desire to urinate.

I have thus merely alluded to the earliest symptoms which may aid the surgeon in recognizing the disease at a time when any plan of treatment, whatever it shall be, can render the greatest assistance towards effecting a cure. At an early period in the disease, muscular tension, due to reflex action, brings the body of the patient into a peculiar position in which the chin is made to project, the shoulders to elevate, and the body is moved with the utmost precision in order to prevent any concussion from being communicated to the diseased vertebræ. As a rule the disease is readily recognized when this period has been reached, and when it has advanced so far as to produce actual distortion, the evidence is too plain to be mistaken. I will not, therefore, consume time in referring to the symptoms of the disease in its advanced stages.

*Method of Examination.*—Let us next turn our attention to

the method of examining the patient. The examination can be most conveniently made by stripping the child (I say child, because the disease is most frequently developed in children), and then placing him, with the face down, across your lap, the arms over one thigh and the legs over the other. Now you have the patient in a position so that when your thighs are separated, gradual extension is made upon the spine of the child. This gradual extension should be continued until it has been made sufficient to relieve the nerves from all pressure and the muscles from all irritation, but not carried so far as to produce reflex muscular contractions. When that has been done, probably the first thing noticed will be the fact that the child gives a full and complete inspiration and expiration. The moment your thighs are brought together, thereby removing the extension from the child's spine, the diseased surfaces are again allowed to come in contact with each other, and the short catching respiration, familiar to every practitioner, is renewed.

Muscular spasm usually extends over the entire body when the extension is removed, especially if it be done somewhat suddenly, but if such spasm is not seen it can be readily produced by placing one hand upon the top of the head and the other under the sacrum, and then crowding the bodies of the vertebræ together. Now, all this is easily demonstrated when the disease affects the anterior portion of the bodies of the vertebræ or the intervertebral disks. But the disease is not always confined to these particular parts of the spinal column, nor does it always commence in one or other of these situations. This is especially true of the dorsal region, where the disease, not infrequently, involves first the sides of the vertebræ at or near the articular facets for the heads of the ribs, and subsequently the anterior portion of the bodies of the vertebræ, as well as the intervertebral disks may become involved. In such cases the blow or other injury which has given rise to the disease, as a rule, has been received upon the sides of the body in such a manner as to drive the heads of the ribs forcibly against the sides of the bodies of the vertebræ. You should not, therefore, be satisfied simply with the examination having reference to the condition of the anterior portion of the bodies of the

vertebræ, but should examine with reference to their sides and articular facets. This can be very readily done by making pressure upon the ribs so as to crowd their heads in contact with these articular facets.

It very frequently happens that the surgeon is unable to obtain any evidence of Pott's disease from physical examination until pressure has been made upon the ribs, crowding them backwards. For, you may be able to press downwards upon the spinous processes without producing pain; you may be able to percuss the spine without giving rise to pain, and, to all appearance, the spinal column may be perfectly straight, but pressure upon the ribs in a direction to crowd their heads in contact with their articular facets at once produces pain and muscular spasm, thus developing evidence of diseased vertebræ at that point.

The fact that pressure can be made upon the spinous processes without producing pain should not be regarded as conclusive evidence that the vertebræ are yet in a healthy condition. For, when the anterior portion of the bodies of the vertebræ is affected, such manipulation tends to liberate the diseased surfaces from immediate contact, hence to relieve the pain. This I regard as an important practical point, and one, as far as my knowledge goes, not referred to in the books. If, in a case where Pott's disease is suspected, the surgeon fails to obtain sufficient evidence, by adopting the measures already hinted at, for a diagnosis, he may with advantage use a piece of ice or a test-tube containing hot water, passing them along the sides of the spinal column. When the diseased portion has been reached there will be an immediate effort on the part of the body of the patient, apparently involuntary, to get away from the irritant. Again, any elevation of temperature can be detected by means of Dr. Seguin's thermoscope when the ordinary surface thermometer fails, thus indicating the presence of inflammatory action.

*Treatment.*—I now come to that part of the subject which interests the patient most, viz., *the treatment of Pott's disease.* For several years I had been in the habit of "turtle-shell-  
ing" these patients, as I called it, with plaster of Paris, thus

encasing the spine and half or two-thirds of the body in an immovable apparatus, after making the proper amount of extension with the patient lying across my lap. I then united the edges of the shell by means of elastic bands passing across the front part of the body, thus giving support, and at the same time permitting the respiratory movements to go on unrestricted. I have had better success by adopting that mode of treatment than by using the best brace that has ever been devised or other apparatus, except Darrach's celluloid jacket or the raw-hide jacket. It was necessary, however, to make those over a plaster model formed while the body was held in proper extension, and although the jacket when first made usually gave great comfort, yet, in consequence of the heat of the body, together with the atmospheric heat during the warm season, it soon yielded and permitted the spine to become distorted because it did not give continuous support.

In November, 1874, a little boy was brought to me having a sharp posterior curvature of the three last dorsal and the first lumbar vertebræ, and there was also partial paralysis of the rectum and one leg. The parents were too poor to buy a brace; it was impossible to send the child to the hospital, so I felt compelled to devise some plan by means of which the boy could be made comfortable while being transported to his home at Chatham Four Corners, Putnam County, N. Y., nearly one hundred and fifty miles distant. Having studied the subject for some time, and questioned myself regarding the propriety of completely encasing the trunk with the plaster dressing, I had finally resolved to make the experiment as soon as a suitable opportunity was offered. It seemed to me that the opportunity had then come, and that the circumstances justified the measure. Accordingly I directed one of my assistants to suspend the boy by the arms in order to see what effect would be produced, and I noticed that, as soon as the body was made pendent, there was more motion in the paralyzed limb than before, that the pain was very much relieved, and that the patient was breathing much easier. While he was suspended in this manner, I pulled down his shirt and tied it between his legs, thus making it fit the body closely and smoothly, and then took

some plaster of Paris bandages which had been prepared in the ordinary manner to be used in the treatment of diseased ankle-joints, and, commencing at the pelvis between the trochanters and the ilium, completely encircled the entire trunk to the axilla. At first I was anxious concerning the effect that would be produced upon the respiration, but inasmuch as the boy cried lustily all my fears in that direction were quickly dispelled, and I went on, reversed the bandage, brought it back to the pelvis, and so went on until four or five thicknesses of the roller were made to completely embrace the body. He was then laid upon his face on a sofa, and was to remain there until the plaster had become firmly set. I left him upon the sofa and went to my lunch, and when I returned I found, to my complete astonishment, that the little fellow had got up and walked across the office, and was then looking out of the window. Still fearing that respiration might be interfered with too much, I cut through the dressing from the top of the sternum to the pubis, thus allowing it to gape considerably and permit a more complete expansion of the chest. *The boy, however, did not feel as comfortable after as before the incision through the front part of the jacket was made.* I then applied a roller bandage around the pelvic portion of the jacket, and again brought its edges together, but left the upper portion to separate as much as the movements of respiration seemed to require. In order to give security to the upper or thoracic portion, and at the same time permit free expansion of the chest walls, I took the mother's elastic garter, cut it into six strips, fastened them upon each side, and then tied them in front.

The dressing now being completed, I requested the parents to return with the child at the end of a week or ten days, when I would have a Taylor's brace ready and would adjust it. The plaster jacket had been put on simply for the purpose of rendering the child comfortable while being carried home. That was the last I saw of either the child or the parents until the following February.

In the mean time the boy had grown considerably, looked healthy, was able to walk without mechanical support, and was not obliged to support the upper portion of the trunk by placing



his hands upon his knees. Without waiting to make any further examination, I at once took the patient in my carriage and started for my clinic at the College. The streets were covered with holes and elevations formed by the ice and snow, and the jolting was almost intolerable, yet the boy made no complaint whatever. That fact of itself showed how efficient the dressing was for securing absolute rest to the diseased parts. At the College the jacket was removed in the presence of the class, when it was found that the curvature was much less, but now the boy was unable even to sit up. As soon, however, as the dressing was reëplied, the mother remarked: "He can now sit up and walk again."

This in brief is the history of the first case in which I applied the plaster dressing completely around the body from the pelvis to the axilla. Since that time it has constituted almost the only treatment which I have adopted for Pott's disease, having employed it in something over one hundred cases, and in each instance with great benefit; but I believe that I have made several essential improvements in its adjustment.

When the disease is situated in the dorsal region, the jacket *should not be opened*, for the reason that if the respiratory movements of the chest are permitted to go on unrestrained, the heads of the ribs are made to move in their articular facets, and the consequence is an increase rather than a diminution of the disease. But the ribs being held still, the diaphragm is made to act more fully, the breathing, instead of being thoracic, is made diaphragmatic and abdominal, and all that short, grunting, catching respiration is done away with; and notwithstanding the respiration is deeper and more prolonged, it is carried on without any pain whatever to the patient. I believe this to be a practical point of great importance, especially in those cases in which the disease has commenced upon the sides of the vertebræ.

The proper plan of applying the jacket is to take loosely-woven cloth, such as cross-barred muslin, mosquito netting, or cheese bandage cloth, and cut it into strips three or four inches in width, according to the size of the patient upon whom it is to be used, and then fill its meshes completely by drawing

the cloths through and at the same time rubbing into them freshly ground plaster of Paris, such as has not been exposed to the air. The strips are then rolled up into tight rollers after the fashion of the ordinary roller bandage, and are ready for use at any time occasion may require. They should be kept in an air-tight tin vessel.

FIGURE 1.



When you wish to apply a jacket, the patient is to be suspended by means of an apparatus, prepared for the purpose, consisting of curved iron bar with hooks at either end from which pass straps that are attached to pads that go through the axillæ and also under the occiput and chin, and are capable of being made shorter or longer according to the length of the patient's neck. The iron bar is suspended from the ceiling by means of a compound pulley through which gradual extension can be made until the patient is drawn up so that the feet swing clear from the floor.

Previous to suspension, however, a thin flexible leaden strip should be laid upon the spinous processes for the entire length of the spinal column, and bent into all the sinuosities, so that it may take a perfect outline of the deformity. This strip is then laid upon paper and its outline marked with ink, and we have a perfect mathematical outline of the irregularities along the spinal column. After the patient has been suspended, the same leaden strip should again be applied along the spinous processes, as in the first instance, and another pattern made upon paper by the side of the first.

Now we have a means by which comparison can be made, and we are able to determine exactly what changes have taken place in the curve. The shirt, which should be woven or knit

without seams, and tightly fitting the body, is next pulled down and an opening made in front and rear, through which a ribbon or piece of bandage is passed for the purpose of holding in place a handkerchief placed in the perineum, and at the same time making the shirt fit the hips exactly; for the tighter the shirt fits, the less number of wrinkles there will be in it. The roller bandages, previously prepared, are now set on end in a vessel containing sufficient depth of water to cover them entirely, and, at first, bubbles of gas will escape through the water freely. When the bubbles cease to escape, the bandages are ready for use. Then taking a roller in the hand, and squeezing it gently so as to remove all surplus water, commence just around the smallest part of the body, going to the crest of the ilium and a little below it, and lay it around the body smoothly, but do not draw upon it at all; simply unroll the bandage with one hand while the other follows and brings it into smooth, close contact with all the irregularities of the surface, over the ilium and dipping into the groin over the abdomen and dipping into the groin again, and so on, from below upwards in a spiral direction until the entire trunk has been enclosed from the pelvis to the axillæ. After one or two thicknesses of bandage have been laid around the body in the manner described, narrow strips of perforated tin are placed parallel with each other upon either side of the spine from two to three inches apart, and in numbers sufficient to surround the body, and another plaster-roller carried around the body, covering them, in the manner in which the first bandage was applied.

These few strips strengthen the bandage, and obviate the necessity of increasing its weight by the application of a larger amount of plaster. If there are any very prominent spinous processes, which at the same time may have become inflamed in consequence of pressure produced by instruments previously worn, or from lying in bed, it is well to guard such places by means of little pads of cotton or cloth or little glove fingers filled with wool which is elastic, which are to be placed upon either side of them before applying the bandage.

Another suggestion, which I have found to be of practical

value, is to take two or three thicknesses of roller bandage three or four inches long, and place them over the anterior superior spinous process of each ilium. These little pads are to be removed just before the plaster has completely set, consequently leave the bony part free from pressure after the soft parts have shrunken under the influence of the continued pressure produced by the plaster dressing. It is also well, just before the plaster has set completely, to place one hand in front of the ilium and the other over the buttocks, and squeeze the cast together so as to increase this space over the bony prominences. In a very short time the plaster becomes set sufficiently so that the patient can be removed from the suspending apparatus and laid upon the face or back on an air-bed, where they are to remain until the hardening process is complete. A hair mattress answers a very good purpose, but the air-bed is preferable, especially if there is much projection of the spinous processes or the sternum.

If there are any abscesses present, they must be freely opened at the most dependent part, and their contents completely extracted by means of the wide rubber cupping glass. Some times large masses of sloughing connective tissue will be found, which look like wads of wet cotton; all those must be removed. After the abscesses have been thoroughly evacuated, oakum should be placed over the opening and then covered with a piece of oil-silk before the shirt is pulled down over the body. A hole is then cut in the shirt which is to indicate the size of the fenestrum, subsequently to be cut in the plaster jacket, and in it is set a folded piece of pasteboard of the same size, and carrying a long, sharp pin thrust through its outermost leaf. Now each turn of the bandage can be carried over the pin without crowding it into the abscess below, and you also have a guide in making an opening that shall lead directly to it. When the plaster has nearly set, you can take hold of the pin and cut around it until the pasteboard is reached, and an opening made sufficiently large to allow of its easy removal. The pasteboard removed, you come at once upon the oil-silk, which is to be starred, or cut from the centre into strips, so that when they are reversed they will cover the edges of the opening in the

plaster where they can be glued down with gum-shellac, and now you have left a fenestrum for drainage that leads directly to the abscess.

As soon as the plaster jacket has become hardened, these patients are able to walk about, and in many instances where paralysis has been present before the jacket has been applied, the patients have been able to walk without difficulty after the application was made. In all cases in which the patients have been unable to walk at all without catching hold of their knees, or hold of a chair or table, or whatever might be within their reach, they have been able, after the adjustment of the jacket, to walk erect and without any support whatever. In every instance in which I have applied it, the pain from which the patients had suffered so continuously has been immediately relieved, and has not returned as long as the bandage remained correctly adjusted.

In some instances indigestion has been the chief thing complained of previous to the use of the jacket, but all their symptoms of dyspepsia have disappeared at once after the application of the bandage. In others a difficult respiration and painful cough have been immediately relieved and have not returned. In short, all the symptoms referable to irritation at the distal extremities of the nerves have been relieved by giving proper support to the spinal column.

The jacket is to be worn as long as it is comfortable, from one to three or four months, or until the patient has grown sufficient to make it necessary to remove it and apply another, or it becomes necessary to remove it for purposes of cleanliness. It can be removed easily by making an incision through it in the median line of the body from the top of the sternum to the pubis by means of a finger-saw or other convenient instrument. When sawed through, the edges of the opening are seized and the jacket gradually opened and the body slipped out, when the cast will shut up like a piece of stiff stovepipe.

In some cases when recovery is nearly complete, it is advisable to remove the jacket, wash the body, and replace it, supporting it in place with a firmly applied roller bandage. But in the acute stages the patients invariably complain that the jacket is

never so comfortable after it has been divided as when it remains whole.

The suspending apparatus has been objected to, because it makes too much pressure upon the axillary plexus of nerves, causing numbness of the arms and hands, and also raises the shoulders so high as to make the patient look uncomfortable. This objection can be overcome in small children by attaching a strip of adhesive plaster to the front and back part of the chest upon both sides, and allow it to rise above the shoulders in a loop, so that it can be secured to the transverse iron bar. This suggestion was made by Dr. H. O. Marcy, of Cambridge, Mass., and I have found it to be of considerable practical value.

The *advantages* which the plaster jacket has over other dressings in the treatment of Pott's disease, are: First, that it affords a means by which positive absolute rest is secured, not permitting motion even in the slightest degree, so long as it is properly adjusted. The result is that consolidation takes place more readily than when motion is permitted by the daily change of apparatus. It is the same as it is in a case of fracture, where union is much more apt to be prompt by the use of a fixed dressing which secures absolute immobility than when an apparatus is frequently changed. Another advantage is that the local pressure attending the use of other apparatus is avoided. The chief way in which these patients have been kept straight, previous to the use of the jacket, has been by means of mechanical apparatus, which has made direct pressure upon the sides of the projecting spinous processes, crowding them in, at the same time making traction in the opposite direction at other points for the purpose of making the spinal column straight. In other words, the fulcrum of pressure has been directly over the projecting part, and has produced pressure that interfered with the deeper-seated circulation, consequently interfered with nutrition, and retarded consolidation and recovery.

In a number of instances in which other apparatus had been used, although accurately adjusted, the disease had steadily progressed, and was progressing when the patients came under my observation, serious deformity having been developed at the end of two, three, or four years, even after wearing Taylor's

brace carefully adjusted; all dressings have been removed, and I have applied a plaster jacket with the happy result of arresting the further progress of the disease. In two such cases consolidation became perfect; in one at the end of four, and in the other at the end of six months, and the consolidation has remained. It may be said that those cases were of so long standing that they were nearly ready to get well of themselves, hence the cure can not be attributed, really, to the assistance afforded by the plaster of Paris jacket. I do not mention them, however, because I regard them as test cases, but prefer to take the results obtained in those cases in which the disease has been treated throughout by means of the plaster jacket in order to prove its value, and as will be seen hereafter, the same favorable termination has been effected in every instance. Such results demonstrate the value of the plaster dressing in the treatment of the disease in its early stage.

Having recently understood that Dr. Joseph Bryan, of Lexington, Ky., had used plaster of Paris in this way in the treatment of Pott's disease prior to my first application of it, and not being able to find any published account of it, I wrote to Dr. Bryan, on May 23, 1876, asking for information upon the subject, and where I could find any published account of the same. He replied in a letter, dated Lexington, Ky., May 29, 1876: "Some time during the months of July or August, 1874, I applied my first plaster of Paris splint to the back for Pott's disease of the spine. . . . An account of my splint has never been published." . . . .

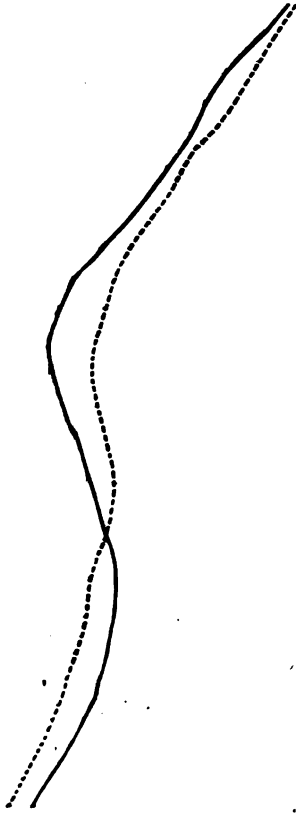
The case was shown, according to Dr. Bryan, to Drs. Erskine Mason, Stephen Smith, V. P. Gibney, and B. J. Harlan, who were much pleased with it, but as no account of it was ever published, and as none of the gentlemen mentioned seem to have been sufficiently impressed with its importance to bring it into practical use, I must at least claim priority in bringing it before the Profession, and into general use, and was not aware of Dr. Bryan ever having applied it until I received his letter of May 29, 1876, or I should have given him credit for it in my previous publications upon this subject.

I have also applied the same plan of treatment to severe cases of lateral curvature with the happiest results.

I append a few histories of some of the cases I have treated, to show its practical results.

**CASE I.**—*April 15, 1875.*—Matilda Bennett, aged 13 years. Parents healthy. Two years ago child had measles, following

FIGURE 2.



this had inflammation of right knee-joint and ankle; under treatment she has entirely recovered from these, and has now Pott's disease; 7th, 8th, and 9th dorsal vertebræ; 9th, very prominent; can be traced to no very distinct cause.

*Treatment.*—Taylor's brace was advised, and worn till Sept. 10th, 1875. When it was found that the pressure on the sides of the prominent vertebræ, caused by the uprights, had produced two quite large excoriations; it was removed, and she went without support for a week, so as to allow these sores time to heal. During this time she was kept in the recumbent position.

*September 16th.*—The plaster of Paris jacket was applied to-day, September 16th, 1875, giving her perfect relief, but, owing to carelessness, it was applied giving her slight lateral curve, as seen in the cast.\*

*September 29th.*—Patient came to office to-day for the first time since the jacket was applied, and says that she would not exchange it for all the iron braces in New York; she was urged to have it removed on account of the lateral curve, but would not.

*November 2d.*—Patient returned to-day feeling very well, and would not have the jacket removed, although advised to do so.

*December 10th.*—For the first time she complained, saying that the jacket was getting too tight; it was removed and a

\* This cast was presented to the Association, but has not been engraved.



new one applied, giving perfect relief and a very perceptible improvement in her position.

*May 1, 1876.*—She has worn the jacket without removal since December 10th, and seems perfectly cured, but refuses to have it removed.

Figure 3 gives a correct idea of her present condition. I regret that I have no photograph of her before the "jacket" was applied, but a comparison of the two curved lines will show the difference in her deformity.

FIGURE 3.



CASE II.—John Jordan, aged five years, of perfectly healthy parents. In January, 1873, Pott's disease appeared in the lumbar region, for which no cause could be assigned. A wheel crutch was used until April in the same year. In May, 1874, a raw-hide jacket was fitted to the child, which gave great relief. The child was again seen in 1874, when he looked well. He continued to run about until June 4, 1875, during which time he had outgrown his jacket, which was removed and a plaster of Paris jacket applied. The child was held out as straight as possible by two assistants pulling one from the shoulders and the other from the ankles, a flannel shirt having been adjusted to his body, then a bandage saturated with plaster of Paris was carried around the pelvis and up to the axilla. The plaster dried readily, and the child was sent home feeling perfectly comfortable. I was sent for that evening in great haste, the mother saying he could not "lay or sit," and found him suffering from too great compression of thorax. I therefore made an incision of about three inches from the top through the plaster, which gave instantaneous and perfect relief. This dressing was worn until July 26, when it was found that a fold in the shirt had produced uneasiness. It was then taken off, and a slight abra-

sion over the crest of the left ilium discovered. The child came to the office on the 30th, when the abrasion was found healed, and was told to return the next day, when the dressing would be reappplied. July 31 another dressing was applied, the child being placed in the sling, the body being the extending power. The plaster of Paris was applied as before. After the plaster had dried, the child walked about the office, feeling very comfortable. The following Tuesday he went on an excursion.

FIGURE 4. *September 22, 1875.*—Was present at the clinic;

his jacket, that had been applied July 31st, was removed. The boy could bear concussion even when the instrument was off without pain, and appeared to be perfectly well, the dorsal and lumbar vertebræ being ankylosed with but slight deformity, as seen in photographs (figures 5 and 6). Another plaster jacket, however, was applied (before the class) to guard against any possible accident. November 1st, jacket sawed open and removed. Boy apparently well, firm consolidation having taken place. He is allowed to wear his jacket as a matter of convenience to satisfy himself, although not necessary.

*January 1, 1876.*—Perfectly well, and needs no support, as seen in photographs (figures 5 and 6).

CASE III—*June 6, 1875.*—Minnie O'Brien, aged three years. Parents healthy; child very well developed; always healthy till November, 1874, when she fell out of the arms of her aunt down eleven steps and was so severely hurt that she could not stand. In a few days she began to complain of pain in her stomach. Mother examined it and found it very hard and swollen. The child has not been able to stand erect since; the mother states that she was always comfortable when lifted by the arms; three months ago a small lump appeared in the lumbar vertebræ, about the size of a hickory-nut. July 28, 1875, child brought to office, examined and found to have Pott's disease. Dark line shows deformity while standing, dotted line during suspension (see figure 7).

FIGURE 5.



29th.—Jacket renewed; child very comfortable.

January 20, 1876.—Jacket reëplied; the child much improved; can stand quite erect without support when jacket is removed.

May 10.—Perfectly well, and but very slight deformity.

CASE IV—April 30, 1875.—Eliza Ann Moyer, aged nine years; St Catherines, sent by Dr. Mack. Family history passable. Father died of consumption. Never noticed anything wrong about the child until two years ago last Christmas, when she had a fall, and shortly after a lump about the size of a marble over the last dorsal vertebræ was discovered.

August 4.—Plaster of Paris dressing was applied, since which time the child has been perfectly comfortable and free from pain.

September 1.—Child complained of pain for a few days; jacket removed; found a small abrasion from a fold in shirt.

5th.—Abrasion healed; child redressed.

October 7.—Child returned, having been in the country four weeks, very much improved in health.

28th.—Jacket removed, child complaining of its being too tight.

FIGURE 6.



She was taken to a neighboring town in which the county medical society was holding a meeting, and on the advice of several medical gentlemen a brace was made somewhat similar to "Taylor's brace," and applied. But the disease still progressed. She was then brought to me; condition as seen in dark line while standing. Five vertebræ are involved; two dorsal and three lumbar. Dotted line shows deformity during suspension (see figure 8).

FIGURE 7. *April 30.*—Plaster of Paris jacket was applied, giving the child most perfect relief.

*August.*—Uncle states in his letter that he and the family physician have been able to remove and reapply the plaster when necessary, giving the child perfect comfort.

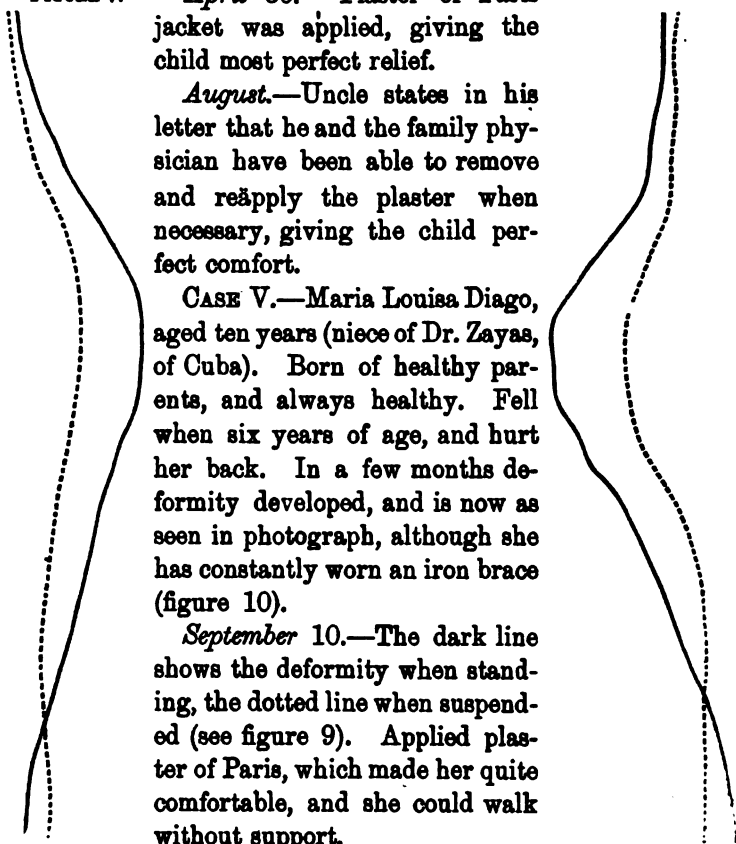
CASE V.—Maria Louisa Diago, aged ten years (niece of Dr. Zayas, of Cuba). Born of healthy parents, and always healthy. Fell when six years of age, and hurt her back. In a few months deformity developed, and is now as seen in photograph, although she has constantly worn an iron brace (figure 10).

*September 10.*—The dark line shows the deformity when standing, the dotted line when suspended (see figure 9). Applied plaster of Paris, which made her quite comfortable, and she could walk without support.

*November 16.*—Has gained flesh. New jacket applied. Deformity much less.

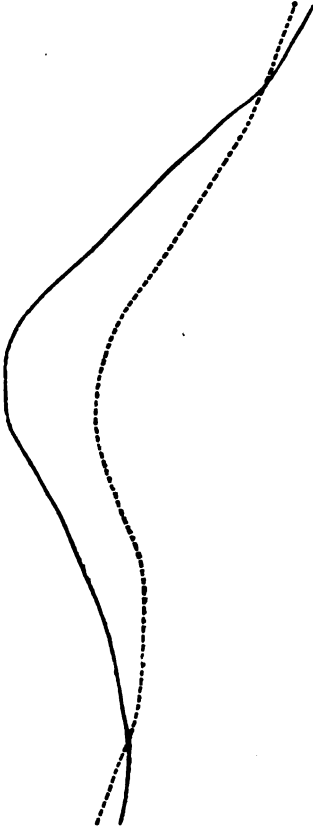
The child left for Cuba November 20, 1875, and I saw her in Cuba, on the sugar estate, in January, 1876, in perfect health,

FIGURE 8.



and much stouter. The same jacket was on her which I applied November 16, 1875, but she was growing so large that it required removal. Before taking off the plaster jacket, Dr. Zayas had the annexed photograph taken (see figure 11). The profile should have been taken on the other side to correspond with the other picture.)

FIGURE 9.



The following cases are good illustrations of the advantages of the plaster of Paris jacket over the Taylor brace. The previous history in each case is copied from my notebook, as they were taken at the time they first presented themselves, and the results of the treatment are from letters of the parents.

CASE VI.—Hattie A. Myrick, aged four and a half years, came under my care November 11, 1872. Parents healthy; three years ago fell from second story of a house to the ground, striking upon her nates. She apparently experienced no injury at the time.

In January, 1870, was quite sick with inflammation of the bowels (the physicians attributed it to her eating bitter almonds). This illness continued two months, and for a year she remained feeble.

In the spring of 1871 there was a time (about six weeks) when she did not use the left foot at all,

owing, it was thought, to a sprain.

About a year ago pain in the stomach was noticed, which gradually increased in frequency. This pain was aggravated by jolting, riding, etc.

Last winter she walked, leaning the hands upon the hips. Was treated for worms and for some kidney trouble. About

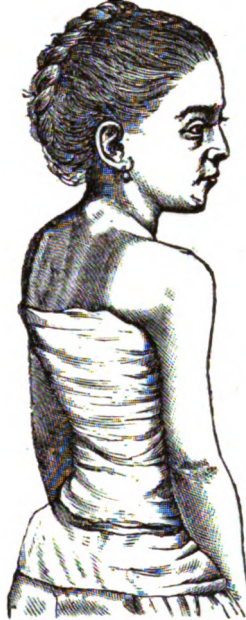
the end of August a prominence was noticed upon the spine, and she was at once ordered to lie still in bed.

*Present Condition, November 11, 1872.*—Projection of tenth, eleventh, and twelfth dorsal vertebræ.

FIGURE 10.



FIGURE 11.



*Treatment.*—Taylor's brace. Rest on back in bed.

*January 21, 1873.*—Greatly improved. Can bear slight pressure on head without pain.

*October.*—Still improving, but has grown so much that the brace has to be lengthened.

*December 17, 1875.*—Last summer she was allowed to play croquet and take much more exercise than before, as she had improved so much. Last fall she was noticed to be losing strength, and complained of pain in her back. Brace has caused excoriations over projecting vertebræ which have become much more prominent; has also slight lateral curvature to the left. To-day, December 18, 1875, applied plaster dressing after extension by suspension. Condition was as seen in figure 12.

The result of the treatment, as well as the comparison of the two methods of giving support to the spine, viz., "Taylor's

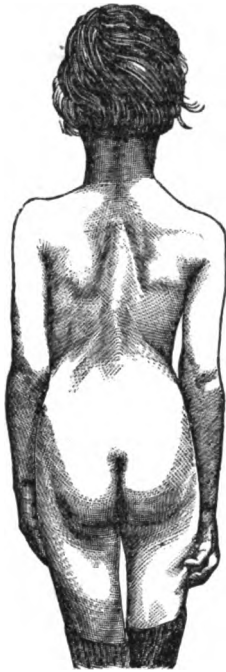
brace," and the plaster of Paris jacket, are well described in the following letter from her father, dated

FORT HAMILTON, N. Y., June 1, 1876.

*Dr. L. A. Sayre, No. 285 Fifth Avenue, N. Y.:*

Dear Doctor,—I have the satisfaction to report a decided improvement in the condition of my daughter Hattie, under treatment for spinal curvature, angular and lateral, by application of the "Plaster of Paris Jacket."

FIGURE 12.



As you will recall, she was placed under your care in November, 1872; a "Taylor's brace" was ordered and applied on the 15th, which she continued to wear until early in November, 1875.

Her condition during the "Taylor brace" treatment may be briefly stated as a steady improvement for about a year, then retrograding, which was checked by putting her on her back, and after a while lengthening and reëdjusting the brace; a new but slow improvement, until late in the summer of 1875, then a decided and rapid deterioration, an increase in the lateral curvature, and the appearance of a severe pain apparently in the side, at first evident only when turning suddenly in sleep, but soon displayed on the slightest jar to the body, or change of position, followed by a rapid decline in general health, loss of strength, and a highly nervous state. The "brace" was then abandoned and the "jacket" substituted.

The first "jacket" was applied on the 18th of December last. The first and immediate effects were the total disappearance of the pain, and an apparent increase of strength, due, I presume, of course to the support given by the "jacket." This "jacket" was worn until about the middle of February, during which time a steady improvement in the general health of the child was noticed, when it was opened and the skin found to be in

good condition. During a period of about two weeks the "jacket" was kept in place by use of a bandage; it was almost daily removed and the parts covered by it bathed.

On the 7th of March the second "jacket" was applied, so successfully as to place the child in a much more erect position than formerly; that "jacket" is still worn, and the result is a decided improvement in the appearance of the patient. She is much stronger, quite free from nervousness; a constant check is necessary to prevent her from gratifying her natural inclination to exercise; a marked improvement, especially during the last two or three weeks, is shown in her figure; the head, inclined to droop, is carried more erect; the right shoulder, formerly badly dropped, is assuming its natural position. In a word, her condition, under the present treatment, is in my opinion rapidly improving, satisfactory and highly promising.

No marked inconvenience from the use of the "jacket" is noticed; the breathing is natural, except after an extra exertion, when short breathing is perceptible. Irritation of the skin, some times complained of in hot weather, is allayed by allowing the child to draw in her breath and then moving the under-garment up and down under the "jacket."

In my opinion the advantages of the "jacket" over the "Taylor" or any other "brace" consist in the uniform support of the "jacket" to the whole of the upper portion of the body; its inflexibility and the freedom allowed to the shoulders. The straps of the "brace" depress the shoulders, giving an unnatural appearance to that part of the body, and, it appears to me, calculated to effect a permanent injury.

Signed,

Very truly,

JOHN R. MYRICK.

Capt. 3d Artillery, U. S. A.\*

CASE VII.—Charles Woodworth, aged three and a half years, Fort Washington. Came to me November 20, 1875. Fell down seven steps upon a hard flagstone about six months ago; in a few months complained of pain in stomach, etc. He was examined by Dr. S. A. Raborg, who diagnosed "Pott's

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\* January 15, 1877. Entirely well.



disease," which I confirmed. Plaster of Paris jacket applied November 21st, 1875.

*December 31.*—Plaster jacket renewed; child perfectly comfortable. This jacket was worn till March 27, 1876, when it was removed; a little redness was found over the eleventh and twelfth dorsal vertebræ, which was cob-housed with adhesive plaster, and a jacket of plaster of Paris was applied, which gave perfect relief, and enabled him to walk well without support.

*May 20, 1876.*—"Jacket" removed, child much improved in flesh and strength; can stand erect when "jacket" is removed, and bear quite firm pressure on the head while standing. Apparently cured, but another "jacket" was applied as a precaution.

The following case is interesting as showing that any physician can apply the treatment who chooses to do so, and thus save his patient the expense and trouble of being taken to some particular specialist:

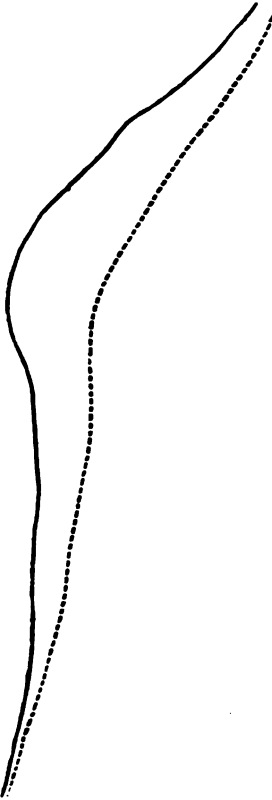
CASE VIII.—Annie D. Stewart, of Chambersburg, Pa., aged eight years, was brought to me on the 29th of October, 1875. Parents healthy; child always healthy till five years of age; while playing with other children she was pushed from a curbstone, falling on her back among a lot of loose cobblestones. A few days after this she complained of more or less pain about the abdomen and right side; mother states that she was not near so lively as before the fall, would cry out at night, could not lie on her back without great pain, was more comfortable while lying on her stomach. Was examined by two physicians, who could not decide on the trouble. In March, 1875, the father accidentally put his hand on her back and found a lump about the size of a hickory-nut; was then taken to a physician who pronounced it Pott's disease.

Treated with a Taylor's brace. Father thinks the back is more crooked than before the use of the brace. October 19, 1875, my assistant, Dr. Robert Taylor, applied plaster of Paris jacket, which gave perfect relief; child made the remark that this was better than all the iron braces.

Dark line shows deformity while standing; the dotted line when suspended (see figure 13).

In February, 1876, I received the following letter from the attending physician:

FIGURE 13.



Chambersburg, Pa. "Mr. Stewart and I succeeded in reapplying the plaster bandages to his little daughter, who I am happy to say is doing finely. Her health has been very much better since her visit to you than it had been for years. If you had done nothing else for surgery than adapting the plaster apparatus to any curvature, you would be entitled to the gratitude of the Profession. When I consider how many children you will rescue from deformity and physical and mental suffering by means so simple and inexpensive that the poorest people and the most inexperienced physicians can avail themselves of it, I feel as if we must include you among the great benefactors of the race. Had you lived in the days of Pope, you would be immortal.

Gratefully yours,

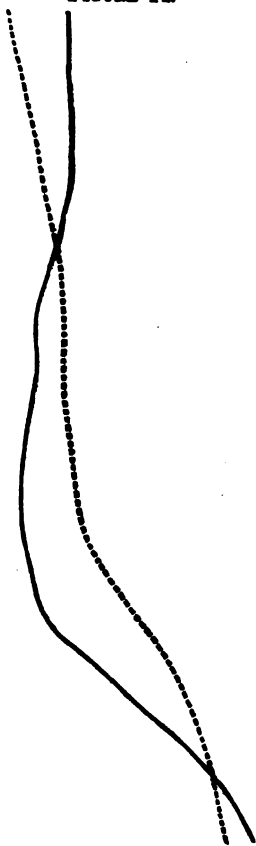
SAMUEL G. LANE, M. D."

CASE IX — *January 12, 1876.*—

Theresa C. Egnelin, aged five years  
The father died of phthisis; mother living and healthy. Child was always strong and healthy till last fall. Mother states that while she was playing on a cart with other children she fell to the ground, striking on her back. A short time after this she began to complain of pain while being dressed and undressed, and also to stoop while walking. Was taken to Dr. Yale in October, 1875, who pronounced it "Pott's disease" lumbar vertebræ, and advised Taylor's brace. Was brought to me January 12, 1876, and diagnosis confirmed. Dark line indicates deformity while standing; dotted line after suspension (see figure 14). Photograph, figure 15, shows position when standing. Plaster of Paris jacket applied, which gave perfect

relief. When the plaster had set, she walked around the office without any support whatever, which mother states she has been unable to do since the time of the injury. This jacket

FIGURE 14.



was worn till April 10, 1876, when she began to complain of its being tight; it was then removed, and as there was a slight excoriation on the side of the vertebræ produced by a strip of adhesive plaster, she was not redressed till May 2d. Mother states that the child is improving and can not get along without the jacket.

*May 23.*—As she has complained of some pain over hips, this jacket was removed and a new one applied, giving perfect comfort. Her present condition is seen in figure 16.

**CASE X.**—George W. Curtis, aged six years six months, was brought to me February 1st, 1876, for hip-disease. His peculiar walk and stiffness of the spine led me to suspect Pott's disease.

Upon stripping the child and examining his spine, my suspicions proved to be correct. There was a marked prominence of the 8th, 9th, and 10th dorsal vertebræ, with intense pain when pressure was made on the sides against the ninth ribs.

He had fallen out of a bed the summer before when in Switzerland, striking his back against the edge of a crib, which hurt him very badly at the time; but as the pain passed off in a few days the fall was almost forgotten.

“Some weeks after this fall he began to complain of pain in his stomach and bowels, which was attributed to indigestion and dyspepsia. He was recommended to the different waters of Germany by different physicians. In the autumn, he had another severe fall, and soon after began to complain of pains in one

knee. These pains were slight at first; but increased week by week, until he began to have great difficulty in walking, his legs seemed to drag, and he had great difficulty in raising his

FIGURE 15.

FIGURE 16.



Theresa C. Egnelin, Jan. 12, 1876.

Theresa C. Egnelin, May 23, 1876.

feet from the ground. He complained very much of feeling tired, and seemed to be losing his strength."

I suspended him in the sling from the armpits, chin, and occiput; and when his feet were swung clear from the floor the spine became *almost* perfectly straight; there was only a very slight prominence over the ninth dorsal spinous process.

His flannel shirt, which fitted him quite snugly, was pulled down firmly until it fitted him like a tight glove.

The plaster of Paris bandage was then applied smoothly from hips to axillæ, and when firmly dried, he could run without any dragging of his legs, and without any pain in his knees. The pain in his stomach and bowels and all symptoms of indigestion ceased from that day, and have not returned.

The short "catching" respiration, and the peculiar stiffness of his head and neck disappeared the moment his trunk and spine were firmly secured, and his breathing was deep and full,

although entirely diaphragmatic. His health and strength improved daily, and in a month he could exercise and walk almost as well as his brother.

FIGURE 17.



He attended a "fancy dress ball" in costume, as seen in figure 17, and no one suspected that he had Pott's disease, or could detect any difference in his movements from the other children. I have repeatedly urged him to let me remove the "jacket," as I was anxious to see what progress was making, and was also anxious as to the condition of his skin, after so long a confinement in this impervious apparatus; but he will not consent. He says he is "afraid that I can not fix him so good next time, and that he is now perfectly comfortable." He has now had it on four months, and refuses to have it removed.\*

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\* Since my report was made in Philadelphia, the little fellow has returned from their country seat at Long Branch, and "wants his 'jacket' taken off, as it is too tight."

June 12, 1876, I removed it in the presence of Prof. Darby of this city; Drs. Benham, of Pittsburgh; Formento, of New Orleans; Logan and Willman, of Georgia; Cullen, of Richmond, Va.; and some others who happened to be in the office at the time.

None of the gentlemen present had the slightest suspicion that he was suffering from Pott's disease, or that he was using any support, until his clothes were removed.

When stripped, his form was perfect with the "jacket" on, and at the request of Dr. Darby, he jumped firmly upon his heels without the slightest evidence of any pain.

Firm pressure could also be made upon his head and shoulders with the same result. Four months previous he could not bear the slightest jar upon his heels, or pressure upon his head.

On sawing down the "jacket" and removing it, his skin was found to be perfectly healthy. But on turning him over to examine his spine, fortunately we found a black spot the size of a finger-nail over the projecting ninth dorsal spine. This was like a hard corn, and was readily lifted off by the finger-nail, and the integument underneath was sound. This place was still a little tender when strong pressure was made upon the sides of the ribs, or on crowding upon the head and sacrum.

CASE XI.—Thomas Cochran, aged seven years. The mother states that he is a very nervous and excitable child. When

FIGURE 18.



I say "fortunately" we found this one tender spot, for in the language of one of the surgeons present, "if I had not done so, they would all have thought that nothing was the matter with him, and that he had never had the disease at all; but the difference in his actions when the 'jacket' was removed satisfied them that I was correct." I have a letter from his mother dated

OCEAN CREST COTTAGE, LONG BRANCH, July 6, 1876.

*Dr. Sayre:*

Dear Sir,— . . . . You put on your "plaster jacket" on the 1st of March, and from that time George has been steadily improving, and, strange to say, he has never had a single pain in his knee since. About two weeks ago the bandage was changed for a fresh one, and the skin was found to be in a perfectly healthy condition.

George has never complained of the "jacket" hurting him, or being uncomfortable in any way. . . . .

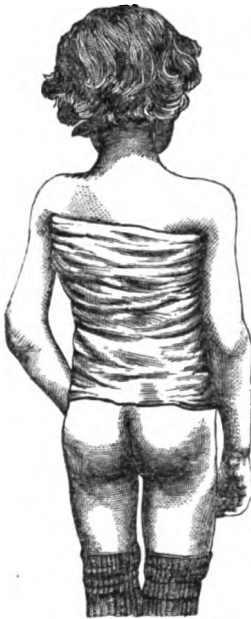
Very gratefully your sincere friend,

ELIZA M. CURTIS.\*

\* January 15, 1877. Entirely well.

three years old he fell down a flight of steps, since which time he has complained of pain in his stomach, sometimes in his back. The mother noticed a bunch upon his back while he was still confined to his bed. This bunch was painful. Has been under treatment by iron braces for four years, and has gradually grown worse. Has been to a Philadelphia hospital for ruptured and crippled, Forty-second Street, and Dr. Sweet, of Newark, has seen him.

FIGURE 19.



His present condition, March 16, 1876, is: Tolerably well nourished, but unable to stand without support; posterior curvature of seventh, eighth, and ninth dorsal vertebræ. The eighth projecting very prominently (see figure 18). Great pain when pressing on head and sacrum. When suspended, the projection diminished very perceptibly.

*March 16, 1876.*—Plaster of Paris jacket was applied.

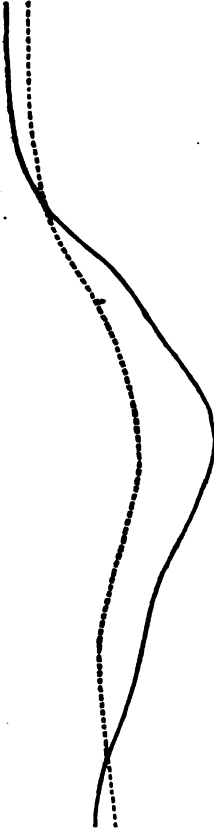
*May 20.*—The boy returned to have jacket seen to. Has been perfectly comfortable since last date. Has improved considerably. Jacket not disturbed, as it is still in good condition, as seen in photograph annexed, and the boy exercises freely without pain or inconvenience (see figure 19).\*

CASE XII.—*February 10, 1876.*—Wm. A. Lyon, aged four years, 127 Morton Street, Jersey City, sent by Dr. Craig, with Pott's disease, eighth, ninth, and tenth dorsal vertebræ of eighteen months' standing, caused by falling down stairs. Taylor's brace applied July 20, 1875; has worn it ever since. At that time deformity very slight (as the parents say). Present condition as seen in curved dark line (figure 20); has two sores

\* January 8, 1877. Perfect consolidation with scarcely perceptible deformity when naked, and imperceptible when dressed. Is in robust health, and very active.

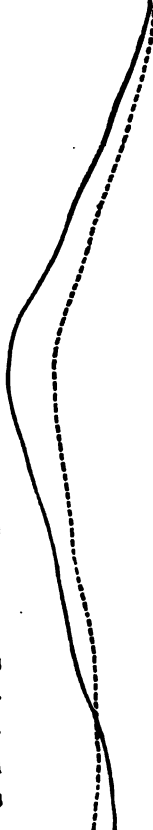
on prominent vertebra. Removed brace, and when extended in sling straightened to dotted line. Applied plaster of Paris dressing, after which he could walk and was comparatively straight.

FIGURE 20.



May 10.—He has been perfectly comfortable since the application of plaster bandage. Exercises freely; has no indigestion or pain; no pain in bowels, of which he formerly complained constantly.

FIGURE 21.



CASE XIII—*March 27, '76.*  
—Edith S. Groot, aged seven; father and mother healthy; has three sisters healthy. About the middle of June, 1875, she was thrown from a trotting sulky, and from that time the father dates the disease, and knows that that was the cause. Direct pressure on the knuckle produces no pain, but when lateral pressure is made intense pain is produced.

The solid line (fig. 21) shows deformity when standing; dotted line when suspended. Plaster of Paris jacket applied with perfect relief. The child was brought to me by her father,

Dr. C. A. Groot, of Westbury, Wayne County, New York.

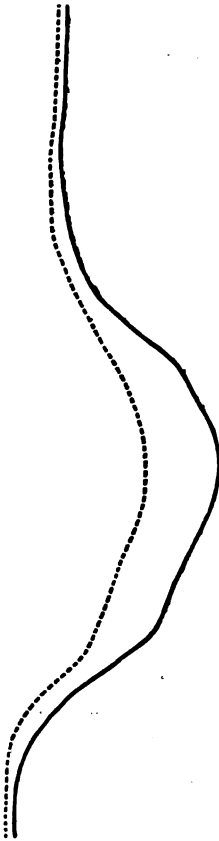
Have since received a letter from Dr. Groot saying that he had been able to reapply the jacket with perfect success, and that the child is improving.

CASE XIV—*March 4, 1876.*—Mary S. Ward, aged four years, Bloomfield N. J., was brought to me March 4, 1866, with the following history: Fell out of a child's carriage when twenty-two months old. Has always been delicate but never sick.



Six weeks after fall, parents noticed symptoms of lassitude, and disinclination to walk, and in six months lost all power of walking, when a swelling in her back was discovered. She was bathed in salt water and put on cod-liver oil by advice of Dr. Parker. At the present time she is unable to stand. Has a posterior curvature of ninth, tenth, and eleventh dorsal vertebræ. Very tender on vertical pressure, and easier by extension by the feet or lifting her by the arms. Advised horizontal posture and applied Taylor's brace on May 20,

FIGURE 22.



1868. With the brace on she can walk with assistance, and stand without resting her hands upon her knees or any other support. Curvature not quite as prominent. Child was not seen again until April 5, 1876, when she presented the appearance shown in figure 23. The curvature has increased, although she has worn the supporter constantly. An abscess formed in the back some months ago, which was opened. Several small pieces of bone have escaped. Dark and dotted lines in figure 22 show diminution of curvature when suspended. Applied plaster jacket, cutting a fenestra over the abscess, with perfect comfort. May 22, 1876, child has improved very much since jacket has been applied. Abscess has been closed for three weeks. Position as seen in figure 24. Jacket removed, and a new one applied without fenestra.

The following letter from her father, the Rev. Dr. Ward, will give a very good idea of her present condition, as well as the advantages of the "plaster jacket" over the "Taylor brace."

BLOOMFIELD, N. J., June 1, 1877.

*My Dear Dr. Sayre,*—Find herewith a photograph of my daughter's back, supported by your plaster corset. You have

the one taken previously. She has, you know, worn mechanical braces, (Dr. Taylor's) since she was about three years old, until the appearance of a cold abscess on her back, and she could wear them no longer. She is now nearly twelve. Your plaster corset has been a great comfort to her, and we think is proving a permanent benefit to her; certainly she has improved remarkably since you applied it. Several reasons commend your corset to us over the brace.

FIGURE 23.



1. By your pulley the form is lifted, near as may be to its erect position, and the corset retains it in its place. Mary is an inch taller at once by it.

2. The corset so completely fits the form as to distribute its support evenly about the whole body, thus relieving the spine.

3. It proves comfortable to wear. Its close adjustment seemed confining for a few hours, but after a night's sleep Mary began

to speak of the great comfort it gave her, and then of her gratitude to you, and from that time on her pleasure has been enthusiastic in it. She breathes easily and naturally with her diaphragm, without any of that short, jerking respiration she had before it was applied, and has been very unwilling to have the corset removed on any consideration; she has worn it now more than six weeks unchanged, and in her gratitude wants everybody to know about it.

FIGURE 24.



4. The corset can be removed and replaced to meet any contingency or change which may require it, and without so large an expense as to be burdensome to those of moderate incomes.

From the day you first applied it, Mary has improved in form, strength, and agility, and in healthful appearance. We have prepared a swing on the principle of your elevator pulley, in which Mary amuses herself daily, and we think with benefit.

In conclusion, let me reiterate the desire of my daughter, that in some way you should let the world know the comfort

and benefit secured to the afflicted by this method of treatment.

Very gratefully yours,

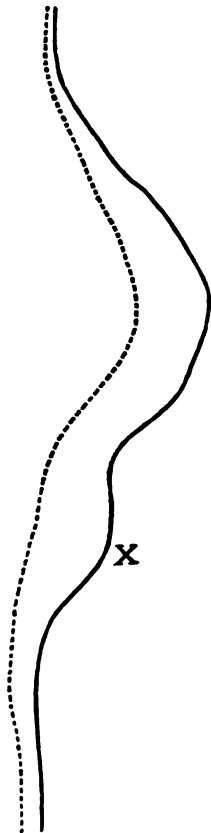
*Dr. L. A. Sayre.*

JOHN WARD.

CASE XV.—Nellie B. Molloy, aged five years, 2202 Third Avenue, New York, was brought to me April 13, 1876. Has always been healthy until about one year ago, when she fell upon her hands and knees. The day following she was seized

with a severe pain in the stomach. This confined her to bed, and a physician was called in, who examined her, but said nothing had developed. Remained in bed three days on account of the pain experienced when standing or sitting. After this she got up, presenting nothing unusual, except a stiff manner of walking now and then, which came and went without any apparent cause. During March, 1876, she gradually became worse, and was sent to me by Dr. Farrington, of Harlem, in

FIGURE 25.



the following condition. Large, well-developed child, walks with a peculiar gait. There is a prominence in the lumbar region, which is very painful upon concussion and compression, and which is diminished by extension. Has also hip disease, first stage, of right side.

*April 13.*—Plaster of Paris jacket applied to trunk and short hip splint applied to right thigh with perfect relief, and she could walk well immediately.

*May 22.*—As the child is going to the country for the summer, a new jacket was applied, and new plasters and bandages to leg and thigh. As soon as the plaster had become set she walked with perfect ease, but when the jacket was removed she could not walk a step or stand without support.

**CASE XVI**—*April 17, 1876.*—Anthony Ryan, aged eight years, 84 Tenth Avenue, of healthy parents, and always strong. When two and a half years old had a slight fall from a bed. Noticed trouble in back almost immediately. He was taken to Dr. Knight's Hospital in 1870, and wore a brace from October, 1870, ever since. Notwithstanding this,

curvature has gradually increased until it is as represented in (figure 25) dark line. Opposite X is a small opening, into which a probe passes to the right three and three quarter inches, to the left two and a half inches, and one and a half inch in an

upward and downward direction. Dotted line in figure 25 is that of suspension; dark line of standing.

*April 18.*—Opened abscess very freely; dressed with oakum and balsam Peru.

FIGURE 26.



*19th.*—Applied plaster of Paris dressing, cutting fenestra for the escape of pus, giving him perfect relief, and enabling him to walk without support.\*

CASE XVII.—Annie T. Crank, aged thirteen years, Athens, Ga., was brought to me March 16, 1876. Father and mother dead; cause of their death unknown. The following history is obtained from her aunt: "At five years of age she had a fall, followed by intense pain in the back and bowels; this continued for some months, when the pain ceased; soon after a bunch appeared on her back. She was taken in August, 1868, to a Dr. Mann, of New York;

he rubbed the spine, and made a brace, which, however, the child could not wear constantly, as it gave her great pain. Then a Banning's brace was procured, but this seemed to press the breast out so much that it was thrown aside. Kolb's brace, of Philadelphia, was then recommended, and worn for two years; an ulcer then appeared on each leg at the top of the thigh, which prevented any brace from being worn for some time."

*October, 1874.*—Dr. Knight, of 42d Street, applied a brace which was much lighter and more comfortable than any before used, but the curve in her back continued to increase, and her breast-bone become more prominent. Her present condition, March 16, 1876, is as shown in figure 27.

\* January 18, 1876, has continued to improve; abscess healed in November. Still wearing the plaster jacket, but without fenestra.

A fistulous opening exists on the right thigh just below Poupart's ligament, discharging quite freely all the time. The aunt says this opening has discharged constantly for four years; she also had a similar opening on the opposite side, but this has been closed for two years. A flexible probe passes into the sinus on the right side below Poupart's ligament upward and backward eleven inches without touching bone.

FIGURE 27.



The tracing of the back by the flexible lead tape, while standing, is represented by the dark line. The dotted line represents the tracing of the curve when suspended, March 16, 1876 (see figure 28). After suspension, the plaster of Paris jacket was applied and worn with perfect comfort till April 22, when it was removed on account of the child having measles. During the time of her wearing the jacket, the pain in the stomach after eating, which before had been a constant trouble, had not annoyed her at all, and her breathing was much freer and deeper when the jacket was on than when she was without it.

*May 12, 1876.*—Reapplied plaster of Paris bandages; child much straighter than when first applied; this jacket is still worn with perfect comfort; she can run up and down stairs without support, and suffers no inconvenience whatever.

Present condition, June 1, 1876, is well represented in figure 29, taken from a photograph just sent me by her aunt, with the following letter:

GLEN-RIDGE HOUSE, CORNWALL, June 1, 1876.

*Dr. Sayre:*

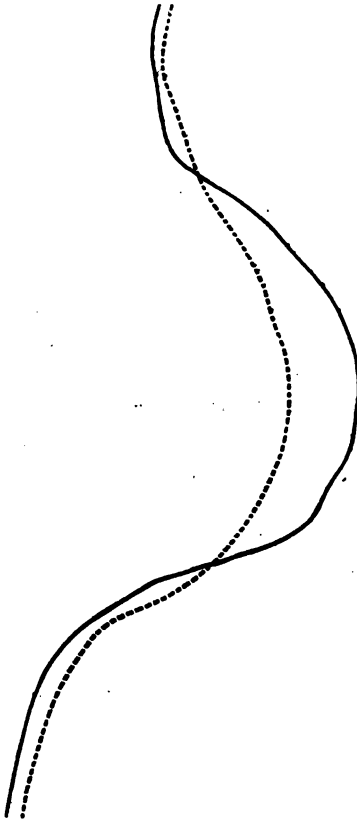
Dear Sir,—I write to tell you what a wonderful success you have made of the plaster jacket that you applied to my little niece; she finds it entirely comfortable and pleasant, sleeps and

exercises in it without any difficulty whatever. She has worn a variety of braces of the best kind, but I think this the best application. Before wearing the jacket she suffered greatly from dyspepsia after eating; no medicine seemed to relieve it; had to be quiet for an hour after each meal; as soon as you put the jacket on, all that trouble disappeared, but comes on again if she is without the jacket for a day. This relief would be enough if nothing else, but I find her waist longer and the bump on the back flatter. All of our friends here notice the improvement since last summer. I think now I am in the right path, and feel so relieved and happy.

Yours most sincerely,

ANNIE CAMAK.

FIGURE 28.



CASE XVIII.—Mary T. Brown, aged twenty-six years, 348 E. 32d Street. Mother died of phthisis; father healthy. Always strong and healthy till two years ago last winter, when she had a severe fall on the ice. Has never been well since, and the least cold would give her severe pain in the back and stomach. Since January 1, '75, has been unable to do work of any kind, or walk without assistance, it having taken her three hours to come from home to my office, a distance of a quarter of a mile, she having to rest on each step and railing on the way. The patient states that pain is constant in her back, and at times very intense in her stomach. Condition as seen in figure 30.

*April 8.*—Applied plaster of Paris jacket, with great relief.

*26th.*—Returned, saying that she could walk a great deal

better with this jacket, but that it was not high enough on her back, and asked to have a new one applied a little higher up. The old one was removed and a new one applied, going well up to axilla; when dry, she walked a quarter of a mile, had photograph, figure 31, taken, and returned home, having walked more than half a mile inside of an hour and a half from the time this jacket was applied.

FIGURE 29.



*June 1.*—She returned, feeling very well, and without the slightest pain or discomfort whatever. Is able to do moderate housework.\*

CASE XIX—*April 14, 1875.*—Chas. E. Webster, aged nineteen years, Binghamton, N. Y. When about three years of age he first complained of pain in the back. Does not know of any injury; was then placed under the care of a Dr. Wood, of Boston, and has been treated with corsets constantly until two or three years since. Curvature was then nearly about the same as dark line; corset was then left off. A year ago last fall again noticed trouble in the spine; has since worn corset.

The dark line indicates his deformity while standing; the dotted line after being suspended five minutes (see figure 32). While suspended I applied the plaster of Paris dressing with a piece running up under the occiput, which gave perfect relief.† His height increased three-fourths of an inch by actual measurement.

*April 26.*—The plaster under occiput having cracked, the jacket was reapplied without head extension piece.

\* January 8, 1877. Can walk without support, and has but slight deformity; consolidation apparently complete, but advised to wear the jacket a few months longer for security.

† Since that time I have devised an apparatus for extension of the head, which is much more satisfactory, and which is fully described in the latter part of this paper.



*May 17.*—As the jacket causes pain over the hips it was removed and a new one applied, with pads over the anterior superior spinous processes. The pads were removed when the plaster set, and he said that the jacket gave him perfect relief from pain. Patient returned to his home to-day.

By comparing the annexed photographs before and after the application of the plaster jacket, the change in his curvature will be seen to be quite apparent (see figures 33, 34).

FIGURE 30.

FIGURE 31.



Mary T. Brown, April 8, 1876.



Mary T. Brown, April 28, 1876.

The following case is a very instructive one, as showing the importance of an early diagnosis before any deformity has occurred, and yet a number of very eminent gentlemen examined the case without detecting the disease.

I think a careful study of the earlier symptoms and mode of examination, as I have endeavored to illustrate in the earlier part of this paper, would render such an error almost impossible.

I quote the mother's letter entire, as it is a type history of the majority of such cases, merely omitting the names of the medical gentlemen referred to.

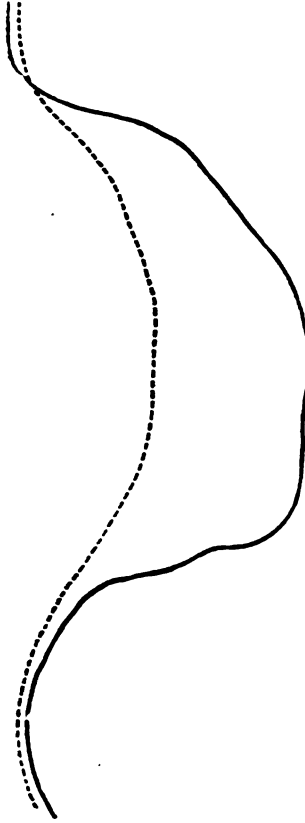
No. 19, EAST 46TH ST., NEW YORK, May 14, '76.

*Dr. Sayre:* Dear Sir,—According to promise I will try to

give you a minute detail of the illness and treatment of my little girl up to the present time.

Florence Boyle is the second child of William F. and Fannie L. Boyle, of St. Louis, Mo. The parents and grandparents

FIGURE 32.



were particularly free from any bone or blood diseases. The other two children are unusually stout and healthy. Up to the time of her injury I never saw a more active, stout, healthy child. When she was two years and three months of age, on July 4, 1868, while playing on the stoop, she fell one step, and I think she fell across an iron foot-scraper, as she cried out as if in great agony; did not cry long, and went out again to play, but played with very little spirit, wanted to be held. The next day she had a slight fever and was very cross; complained of no pain. In the next few days complained that her wrists and ankles hurt her. Then when playing would stop suddenly and put her hands to the lower part of her bowels and say it hurt her; it would not last long, but occur often during the day.

I had a friend whose child had spinal curvature, and these symptoms rather alarmed me. I examined her spine one night, at the end of three weeks after the injury, and she winced decidedly when I touched two places, one at the waist and another between the shoulders. Next day I took her to town and had her examined by four physicians separately, neither knowing the other had seen her, each one said these were symptoms of spinal trouble, but must wait for further development, so I took her home and waited for four months, symptoms getting worse, and at last a small knuckle appeared between shoulders. Then I called in two of our leading surgeons; one advised

use of a brace, the other advised that child be confined to bed for one year. Then went to another physician, who had recently come from Brooklyn, and made diseases of the back a speciality; advised his brace and to keep the child on her back too. I placed her under his care, because this plan agreed with both the others, and at the end of ten months she was totally paralyzed from hips down, feet drawn back till they almost touched the calves of her legs; curvature much worse, and spot at waist much more sensitive. Leeches were applied at that spot, which gave perfect relief from all soreness. She never complained of

FIGURE 33.



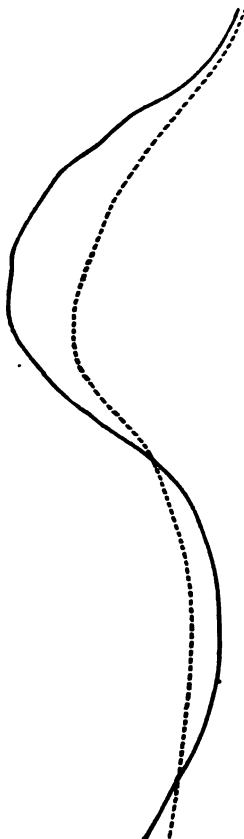
FIGURE 34.



pain anywhere, and was very fleshy while confined on her back. The Doctor then wanted to put both limbs in iron braces, but I could not approve of it, so I took her out of his hands. She was paralyzed for three years. I next took her to Boston, where she remained a year; she was so much relieved that she could crawl, but not stand an instant, or walk. This new doctor's brace failed also to arrest the increase of curvature; still she did not suffer. Becoming discouraged, I took off this brace. Her

paralysis became worse until the end of three months, when she one day pulled up by the window and walked across the room, and has walked some ever since. She did not wear a brace for two years, walking and running around like other children, only bending forward terribly, the curvature getting worse. Then I

FIGURE 35.



took her to a doctor from Indianapolis, who applied his brace, which has been of great and positive injury to her; she has suffered a great deal this past winter; would have to take off the brace and stay in bed three or four days at a time. The muscles in back would swell up and be exceedingly sensitive to the touch.

I sincerely regret I delayed so long coming to you. The improvement by to-day's treatment far exceeds the wildest hope I ever had of her recovery. The straightening of the curvature by this one "hanging up" is really just twice as much as I expected to have accomplished in three years' treatment. Whether you believe in prayer or not, I shall most certainly ask God's blessing to rest upon you and reward you eternally, as well as in this world.

FANNIE L. BOYLE.

CASE XX—*April 28, 1876.*—Florence Boyle (see figure 36). Dark line shows deformity while standing. Dotted line shows the decrease of the deformity during suspension (see figure 35). While the child was thus suspended a plaster of

Paris jacket was applied, which did not give perfect relief; it was removed and a new one applied, but had to be removed, as it caused pain over the prominent points of spine. As there was a very sensitive point over the second dorsal vertebra, leeches were applied, with marked relief. A new jacket was applied on the 4th of May, and, as the disease was so high up, a Davis's head supporter in conjunction with it, affording

perfect relief. Child walked two blocks, and can sit up, stand, and run round, which she had not been able to do for months (see figure 37).

*May 1.*—She has continued to wear the last “jacket,” in connection with the Davis’s head support, without any discomfort. She has improved in flesh and spirits, has become rosy-cheeked and playful; in fact, is so completely changed as to attract the notice of all her friends. She was three-fourths of an inch higher by accurate measurement immediately after the suspension, and the “jacket” and “head rest” have retained it.

FIGURE 36.



FIGURE 37.



CASE XXI—*May 15, 1876.*—Elvira Arango, aged twelve years. Father healthy; mother’s history passable. Cause unknown. When eight years old complained of more or less pain about the spine. Noticed nothing till two years ago, when mother found a small knuckle about last dorsal and first and second lumbar vertebræ. She has been treated by the prone position more or less ever since the deformity was noticed, and the uncle, Dr. Arango, says “that the deformity has increased,

notwithstanding she has been most of the time in the horizontal position." Present condition as seen in figure 39. Dark line indicates the curve when standing. Dotted line shows deformity during suspension (see figure 38).

*May 20.*—Plaster of Paris jacket applied after suspension of the body, which gave perfect relief, and a marked improvement in her figure.

**FIGURE 38.** *June 3.*—Has been perfectly comfortable since last date. Has taken a great deal of exercise, and has had no pain. Has menstruated for first time, and the mammæ have increased so much that the top part of the plaster had to be cut out to accommodate them. Position as seen in figure 40.

The following note from her uncle, Dr. Arango, explains her condition, and also the effect of the plaster jacket:

"When taken to Dr. Sayre on the 15th of May, 1876, there is an enlargement of the lumbar region, with protrusion of the spinal process, and deviation of the spine to the right; when hanging the angle diminishes greatly, as well as the deviation of the spine to the right.

"After the bandage has been applied she walks with perfect ease, and is straight (see figure 40).

D. A. ARANGO."

The following case is one of such extraordinary interest that I wish to add it to my report, but have delayed in sending it to the publishing committee until I could get a confirmatory diagnosis of his case from the different physicians who had had him in charge during the past four years. As the result of the treatment has been so nearly marvellous, any one would be liable to the charge of having made an error in diagnosis, unless sustained by competent witnesses who had also personally examined the case. I therefore wrote to each of the medical gentlemen who had attended him, asking for their diagnosis of his case.

Unfortunately Dr. Otis was absent from the city for some

months, and the books of the Strangers' Hospital, where the case was first treated, can not be found since that hospital has been destroyed. But I have received replies from a sufficient number of competent judges confirming my diagnosis, so that I feel justified in giving the case to the Profession, particularly the opinion of Dr. Gibney, who probably examines more cases of Pott's disease every year than all the physicians in the city.

FIGURE 39.

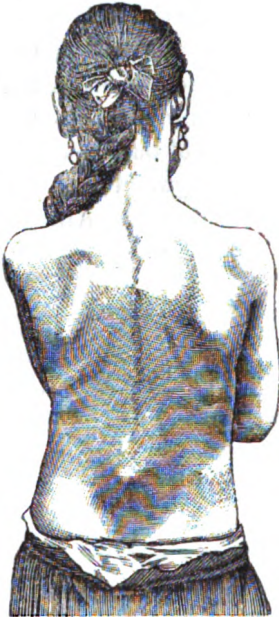


FIGURE 40.



On May 10, 1876, A. J. Hessler called at my office with the following note:

My Dear Doctor,—This man will tell you his story, and I feel sure you will admit him to your wards at Bellevue.

I would willingly furnish him with a brace, but he has not where to lay his head. You would prefer plaster of Paris, and consequently I have taken no measure for a brace.

Yours respectfully,

*Dr. Sayre.*

V. P. GIBNEY.

When the man came in the office his countenance was expressive of great pain; he could not stand erect, but was very much bent forward, resting both hands upon his knees, and had

a very hurried and short respiration. He was so exhausted in coming from Forty-second Street to my office that I had to give him brandy and let him lie down for some time before he could be examined. His history was as follows, as written out by himself:

"Arthur Alex. Hessler, native of Paris, France; aged thirty-two years; musician by profession; of healthy parents, and myself always robust and very active until the spring of 1872, when I was playing with a comrade, and got struck heavily in the abdomen and back. At the time I was struck I lost my breath, and felt a very painful sensation going through the backbone, and since that day have been complaining all the time of great weakness in my back, that has compelled me to keep my bed for many months, on several occasions feeling powerless in my legs and paralyzed in my back.

"In February, 1873, I was admitted by application in the Strangers' Hospital in Tenth Street and Avenue D, under the treatment of Professor Otis, visiting physician; Dr. Kearny, house surgeon of the ward. The treatment I received was cupping and blistering on my back, and constant confinement to my bed. This relieved me to a certain extent, and I was discharged as cured in May, 1873, by Prof. Sands (then visiting surgeon to the hospital). I went to my business for a few days, but had to go to bed again, and have been unable to do anything for the past three years.

"I was under treatment of a great many doctors until I spent all my money, and then went to Roosevelt Hospital, Fifty-ninth Street and Tenth Avenue, in March or April, 1876, and put in ward No. 4, and treated for diseased kidney for about one month, when Dr. Thompson, then visiting physician, examined me, and told the doctor I was not a case for the medical ward, but the surgical; telling him that I had an enlargement or projection of the lower dorsal vertebra.

"I was immediately transferred to surgical ward No. 2, Dr. Rice, house surgeon, and Prof. Wier, visiting surgeon. I was put to bed and cupped on my back, and extension was made of my feet, which gave me considerable relief. After some time they sent me to Dr. Shaffer, 52 West Twenty-eighth Street, for



a steel brace, but as I could not pay him \$35 for it I returned to the hospital.

"Two days after this Dr. Rice informed me that it was useless for me to remain in the hospital any longer, as my case was incurable, and advised me to go to Dr. Knight's Hospital for Cripples in Forty-second Street, and Dr. Gibney sent me to you."

This is the man's history as written by himself, and of course must be received with all due allowance. I have endeavored to make it correct as far as possible by corresponding with the surgeons in the various hospitals referred to, and the letters in response are hereto annexed.

When he came to my office he was unable to stand erect, and was complaining of an intense pain in the back, and "as if a hot wire was binding him around the lower part of his belly." Upon stripping him, the tenth, eleventh, and twelfth dorsal, and the first lumbar vertebræ were found very prominent; the two last dorsal and the first lumbar making quite a sharp angle with each other.

When he was suspended in the sling he expressed the greatest delight as soon as his heels were lifted from the floor, and said the hot band around his bowels was loosened, and that he could breathe much easier than he had done for months. The extension was continued very slowly and gradually until his feet swung clear, when he almost instantly exclaimed, "that's the first full breath I have had in two years; if I had my cornet now I could play as well as ever." It is very probable that if I had applied the plaster bandage *at that time* and retained him *exactly in the position in which he was*, he could have played his cornet that evening, as he stated he would. And from what I have seen of him since, I am quite convinced he could have done so.

Being anxious that Dr. Gibney should see the application of the plaster dressings, I took him from the suspending apparatus and laid him on the floor on an air-bed, and immediately sent my servant for Dr. Gibney, who returned in a few minutes with the following note :

OUT-DOOR DEPARTMENT,  
HOSPITAL FOR THE RELIEF OF RUPTURED AND CRIPPLED,  
N. W. Cor. 42d Street and Sixth Avenue.

My Dear Doctor,—This has proved to be one of our "field days," and I will not be able to get through before 1 o'clock, consequently have to ask you not to save anything for me today. Thanking you for your kindness, I am hastily yours,

*Prof. Sayre, May 10th*

GIBNEY.

The man still insisted that if I could only fix him in the position that he was in while hanging and keep him so, he could play his cornet as well as ever, and could then earn his \$10 a night and need not go to the hospital. He was so positive on this point that he refused to go to the hospital, and, as I was anxious that Dr. Gibney should be present, I refused to apply the dressings until the following day.

The man said he had not a cent of money, but he had a friend in Washington Street near the Battery, where he could stay for one night, and if I could fix him like he was when hanging, he could make money enough to take care of himself. I therefore arranged to apply the dressings on the following day at 12 o'clock. This was an unfortunate mistake, as the exercise of going to the Battery and back was too much for him, and when he returned the following day he was so completely exhausted, that it was with great difficulty that my assistant, Dr. Taylor, and myself could get him in the suspending apparatus, and before the dressing was completed he swooned, and we were compelled to lay him down, with an insufficient amount of plaster on him to support, and in taking him down a little too soon it cracked, so that our experiment of having him blow the cornet that night was a failure.

After resting some hours I took him to Bellevue Hospital; but the following day, the "plaster jacket" having cracked, pained him so much that it had to be removed. He was placed upon a water-bed, and freely cupped over the tender portions of the spine, with great relief. The cups had to be renewed once or twice, and the recumbent posture on the water-bed with extension at the feet kept up for some weeks.

After this another "plaster jacket" was applied; but the

plaster not being good, it did not afford him the relief I expected and was removed. Another one was put on him at the hospital, which enabled him to walk around tolerably well; *but did not give him the support requisite to make him perfectly comfortable.* He therefore came to my office about July 1, and I removed it. After washing him thoroughly and putting on him a very tightly-fitting flannel shirt, I suspended him and applied another dressing. In this case I used, as I now always do, the bandages made of "crinoline" or "cross-barred wiggins," the meshes of which, being much larger, will hold more plaster than the ordinary roller hospital bandages.

This suspension and application happened to be *exactly right*, and as soon as the plaster had hardened or "set" he jumped up on his feet, and capered around like a wild man. He could take the deepest possible inspiration, and concuss himself upon his heels without the slightest pain or inconvenience.

A short time after, this "jacket" was sawed down the front, and eyelets put in it, so as to be laced like a corset, and could be removed and reappplied at will.

With this jacket properly laced he could play his cornet as well as he ever did, and no one looking at his ruddy face, and watching his elastic step, would ever dream that he was suffering from "Pott's disease," or any other infirmity.

How long before ankylosis will take place, and a cure be effected, of course I can not answer; but that the man is changed from wretchedness, pain, poverty, and intense suffering, to perfect comfort, and an ability to earn his living with cheerfulness and pleasure, is apparent to every one who has seen him.

Hessler called to see me at the West End Hotel, Long Branch, on the 13th of July, and I did not recognize him. His form was erect, and his face florid, with the ruddy hue of perfect health. He stated that he was returning from Philadelphia, where he had played the cornet in Gilmore's Band, at the Centennial, the night before until 12 o'clock, and that he was then on his way to fill his engagement to play at the Hippodrome in New York, at 8 o'clock that evening. I have seen a number of persons who were present at the concert, who told me that,

with the exception of Levy and Arbuckle, they never heard the cornet played better than by him.

I am well aware that this sounds more like a "fairy tale" than a statement of actual facts, and therefore have corroborated the statement by the annexed letters of other well-known physicians who are familiar with them.

When we consider the unsatisfactory results hitherto of all our treatment of this disease, and compare them with this case and a number of others that I have seen, we are perfectly justified in using the language of Prof. Alfred C. Post in saying, "it marks an era in the history of surgery."

HOSPITAL 135 EAST 42D STREET, July 17, 1876.

*Lewis A. Sayre, M. D.:*

My Dear Doctor,—At the time I saw Arthur A. Heesler, May 9, 1876, I had no hesitation in diagnosing caries of the spine. The history and the signs would admit of no other diagnosis. He had great difficulty in walking, was stooped far forward, and the spinous processes of the last two dorsal and first lumbar vertebrae projected about three-fourths of an inch. I regarded him as unfit for out-door treatment, and sent him to you, who kindly admitted him to Bellevue, and returned him to me for inspection, July 9th, or thereabout. He then walked erect, was active, and had so changed in appearance that I failed to recognize him. From him I learned that on the morning of May 10th, you applied a plaster of Paris jacket in your office, and sent him to the hospital; that you called the next day and found him in such pain that the jacket had to be removed; that leeches and ice were applied to his spine, and that he lay on a water-bed for three weeks; that a jacket of poor plaster was applied and no benefit followed; that two weeks later another was applied (better plaster), and perfect relief was afforded; that he had been improving in every particular since. Two weeks later I saw him at Gilmore's Garden, no sign of relapse having occurred. He still wore the jacket.

Very truly yours,

V. P. GIBNEY.

35 WEST 33D STREET, August 9, 1876.

Dear Doctor,—I am sorry that I can not enlighten you con-

cerning the patient referred to in your note; but I think you will find his case recorded in a case-book which is in Dr. Otis's possession. When the Strangers' Hospital was disbanded, the records were divided among the attending staff, and I am pretty sure Dr. Otis got the book belonging to his service. You will have no difficulty in consulting the records at the "Roosevelt."

Yours, truly,

H. B. SANDS.

*Dr. L. A. Sayre.*

No. 19, EAST 32D STREET, July 24, 1876.

Dear Doctor,—Dr. Rice is absent in Europe, and my recollection of Hessler's case is very imperfect. From the hospital records I find that he was admitted to my ward May 2, and discharged from the hospital May 8. I only remember the point that attention was attracted to the apparently rapid progress of the dorsal tumor.

Dr. Rice will probably return in August.

Yours, very truly,

R. F. WIER.

*Dr. L. A. Sayre.*

Arthur Hessler, musician, France; single; aged thirty-one; admitted April 27, 1876. Up to 1871 patient says he was a healthy man. Does not know whether he had the lump on his spine before that time or not. At that time he had the gonorrhœa, but denies all other venereal symptoms. Soon after had a severe pain in his shoulders, back, and arms, which he attributed to exposure to cold. The pains all settled in his back, and he was compelled to go to the Strangers' Hospital. He was there some months, and was then discharged cured. From that time he has been comparatively well at times up to the 3d of April, when he was attacked with shooting pains along the spine, and had night-sweats at the same time; has been growing weaker ever since.

On admission, find a prominence of the spine of the eleventh or twelfth dorsal vertebra, and patient unable to stand. Complain of pain and weakness in the back. Cups were applied, and patient much relieved.

*May 2d.*—Patient transferred from the Medical to the Sur-

gical Division. Can now walk, but still complains of the pain and weakness. Cups again applied.

8th.—Patient discharged unimproved.

S. W. BUDD, Sen. Assist. Sur. Roosevelt Hospital.

BELLEVUE HOSPITAL, July 31, 1876.

Dear Doctor,—Your note was duly received, and in accordance with your request I enclose Hessler's history, as recorded by my senior assistant, who is the historian. I think it is an excellent case; such a marked improvement. Came to see me a few days ago; he was as lively as a cricket; no one would ever suspect Pott's disease; he was looking very well.

Very respectfully,

HENRY M. SILVER, M. D., House Surgeon.

*Dr. L. A. Sayre.*

Arthur A. Hessler; aged thirty; single; French; musician; admitted May 10, 1876; residence 194 Varick Street. On admission he had on a splint, which had been applied at Dr. Sayre's office. He was able to walk, but was suffering from pain in the chest, back, and thighs. This splint was cut down on the day after admission to relieve the irritation, and that evening six cups were applied by the side of the spine at diseased point; this treatment afforded much relief. About a week after another exacerbation of pain was overcome by similar treatment. The patient was then placed on a water-bed, upon which he lay for five weeks, feeling more comfortable, as he said, than he had for some time. At the end of this time another plaster splint was applied; this fitted the patient well, and while wearing it he was able to walk in an upright position without difficulty. This was taken off in two weeks, as it had broken down, too little plaster having been placed in the bandage. The patient was obliged to go to bed again, as he could only stand by placing his hands upon his knees. The third splint, which was applied a few days later, was cut down on the third day, as it was too long below, hurting patient's hips. During its application he fainted. The fourth was applied at Dr. Sayre's office; and four days afterwards this cracked, and was removed. On July 7, the fifth and last splint was put on at Dr. Sayre's office; this was a good fit, the patient being perfectly easy in it; goes

about the grounds at will; is up all day, and has improved wonderfully in general condition. This splint was cut down in front, and a piece taken out; eylets were then made, and the splint converted into a plaster corset.

When he came in patient was suffering greatly at all times, and was unable to stand erect except when supported by a splint; he was pale, and showed the marks of great suffering. He is stout and healthy, and free from pain. Now, even when the splint is removed, he can stand erect and walk; the splint being now used rather as a precaution than from necessity.

He was discharged July 14, and is now playing a cornet at Gilmore's Concert Garden.

HENRY M. SILVER, M. D., House Surgeon;

ARTHUR BELL, M. D., Senior Assistant;

MARTIN BURKE, M. D., Junior Assistant.

*Third Surgical Division Bellevue Hospital.*

#### ADDENDA.

Since the above report was presented to the Association, I have abandoned the use of the "Davis head support" in cases of disease of the cervical and upper dorsal vertebræ, as seen in figure 37, and have accomplished the object desired, namely, suspension of the head and extension of the vertebræ, by means of an iron rod, which is secured to two pieces of malleable iron, which are placed on either side of the spine, and which can be bent so as to accurately fit any curve in the plaster jacket, which has already been applied to the entire trunk of the diseased patient, and retained accurately in position by having attached to them two narrow strips of perforated tin, which should be long enough to very nearly encircle the entire trunk, leaving only a central line of an inch or so in width in front of the body, for the purpose of cutting or sawing down the plaster jacket whenever it may become necessary to remove it. The central bar is attached by two cross-bars to the upper portion of this malleable framework, and is curved over the top of the head to the vertex; and to its extremity is attached a swivel bar, an inch or two in length, from which the head is suspended by adjustable straps, secured under the chin and occiput. This upright bar is made in two pieces running into

each other at the straight portion behind the neck, and capable of being extended to any desired length, and firmly secured in position by screws. To apply the apparatus, the patient is suspended in the usual way from the axillæ, chin, and occiput, and the plaster bandage applied, as usual, over a tight-fitting knit or woven shirt. After the bandage has been accurately applied the patient is removed from the suspending apparatus and carefully laid upon an air-bed until the plaster has hardened or "set." The patient can then stand up, and the apparatus for suspending the head is applied in its proper position, over the back of the plaster jacket, and the lower portion of it bent and moulded until it accurately fits all its various curves. The loose tin strips, being very flexible, can then be smoothly

FIGURE 41.



FIGURE 42.



moulded around the jacket which has already been applied to the trunk, and another plaster bandage having been wetted in water is to be carefully and tightly applied over the apparatus and jacket first applied in sufficient number of layers to make it perfectly secure. The tin being rough and perforated, a sufficient amount of plaster will be incorporated into its holes and meshes to prevent any possibility of displacement. We have now a secure point of support from the pelvis and trunk from which the head can be sustained by properly adjusting the movable rod and securing it by screws.

Its practical application is seen in figures 41 and 42. The ease and comfort to the patient, together with the perfect free-



dom of mobility to the head, make it very much more satisfactory than any contrivance that I have yet seen used.

I will simply add one more case out of a number in which this treatment has been applied, as it is a good illustration of the *immediate* relief that is given to the patient when the support has been accurately adjusted.

CASE XXII.—Lewis Easton Flournoy, aged nine years, residence St. Louis, Mo., was brought to me on the 27th of October, 1876, by his father, with the following history: Father and mother both healthy, and boy always healthy and strong until the 25th of December, 1873, while playing in a hay loft he fell, head first, down a hole in the hay mow to the barn floor, a distance of eight feet. He cried for an hour after the fall, saying his back hurt him. He was tolerably well for some three or four weeks; then began to complain of pain in the shoulder; was treated for rheumatism for some weeks without any relief, and it was then discovered that he had a lateral curvature. Drs. Schoaley and Payne applied a brace. This brace was worn fourteen months, when it was discovered that he had a double lateral, and a very prominent posterior curve.

Dr. Franklyn, of St. Louis, applied a new instrument, which gave very little relief. This was worn for six months; but the posterior deformity continued to increase, and his "breast bone" to be more prominent. The father noticed about ten days since that he had great difficulty in walking, and for the past three days could not walk at all, or stand without support. When he attempted to stand he had a very short, grunting respiration, and very marked convergent strabismus of both eyes.

I suspended him and applied a plaster of Paris jacket on the 28th of October, 1876, and in half an hour after, when the plaster became "set," he could stand without assistance. The next day the father stated that he had slept better than he had done for two years, and had eaten a better breakfast than he had known him to eat since he was hurt. He could walk without assistance, and could poise himself on either leg by simply steadying himself with one hand on a chair, and could raise the other limb so as to put his foot in a chair. He still carried his

head forward in a constrained position—had a peculiar catch in his respiration, and the convergent strabismus continued.

FIGURE 43.



I placed my hands under his chin and occiput, and lifting his head very slightly, the strabismus immediately disappeared, and he exclaimed "that's what I want." As soon as I released my support, the strabismus returned.

I sent him to Mr. Rynder's, 309 Fourth Avenue, to measure him for an outside support, or "Jury mast," such as I have described, to be applied over the "plaster jacket."

On the 8th of November, before a large class of physicians and students in the amphitheatre of Bellevue Hospi-

tal, I applied this outside support for head suspension, as seen in figures 43 and 44; and, as soon as the plaster was "set" and the head properly suspended, his respiration became natural, the strabismus disappeared, and he said he was perfectly comfortable. In less than half an hour after the adjustment of the apparatus, he ran up and down stairs in the amphitheatre without the slightest inconvenience. He went to Philadelphia the following day, and his father states that he spent two days in walking around the Centennial buildings without fatigue or inconvenience. He left for his home

FIGURE 44.



in St. Louis on the 13th of November, but before he left I persuaded him to go to O'Neil, the photographer, and have his picture taken, from which figures 43 and 44 are engraved. I regret that I have not a picture of him on the 27th of October, but it could not be taken, as he was unable to stand for it.

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EXTRACTED FROM THE MINUTES OF THE SECTION ON SURGERY AND ANATOMY.

TUESDAY, June 6, 1876.

The Section met at 3 P. M.

Dr. Alonzo Garcelon, of Maine, Chairman; Dr. E. T. Easley, of Arkansas, Secretary.

The Chairman—We have assembled the Section on Surgery. As yet I have not been able to confer with the members of the Section, and do not know whether any definite arrangement has been made with regard to the matters to be introduced. I am aware that there was a paper which was referred to this Section; but the Secretary has not reported to us yet. I hope that all gentlemen who have papers to read, or who have any special subject to bring before the Section, will do so early, in order that we may know somewhat of the nature of the business we have to attend to. We are in hopes to make this meeting profitable. In order to do that we must all be active and prompt, and lose no time; and if any gentleman proposes to introduce any subject to the Section, or who has any paper to read, and will have the goodness to forward it to the Secretary, we will endeavor to have the matter arranged so as to give each an opportunity to be heard.

We will hear from Dr. Sayre, if he is ready to read his paper.

Dr. L. A. Sayre, of New York, then read his paper on Pott's disease of the spine. During the reading of the paper he exhibited an apparatus for suspending the patient, and presented several cases which he had treated of this disease, and added, at the end of his paper, that doctors, instead of sending their cases to specialists, ought to treat them themselves. His object in bringing it before the Section was to show the Profession that each and every one could treat this disease as well as he

or any other specialist could. Patients can be kept at home and cured, thus saving the inconvenience and expense of traveling. The treatment of the cases here reported has been that of far advanced cases. He had a number of other cases, where the disease has been treated in this way from the outset, and that is an important point; for, if the disease is taken in its earliest stages, before the deformity has occurred, by this treatment prompt restoration occurs without deformity.

A Delegate—I would ask if there is any other treatment to be observed; that is, constitutional treatment.

Dr. Sayre—The best constitutional treatment is: Roast beef, beefsteak, mutton chop; generous diet and fresh air, and as much of it as you can get; and if the patient is subject to indigestion, make him digest.

A Delegate—I understand that he said he applied this jacket without applying anything else. I wish to inquire whether he applied it to the naked skin?

Dr. Sayre—I did not apply it in that way, and I think it would not be a good thing to do.

A Delegate—Did you make use of linen?

Dr. Sayre—I take a woollen shirt, one without seams, that will fit as tightly as possible, and am careful to have no puckers in it; that is as necessary as anything.

The ordinary bandage is too closely woven and too heavy, and will not hold plaster enough; mosquito netting is almost too loose, and, as I say in my paper, it should be a cloth that is loosely woven.

Dr. A. C. Post, of New York—What you call crinoline?

Dr. Sayre—Yes; Dr. Post has got it.

Dr. Post—I move that this paper be referred to the Committee of Publication. I consider that this principle introduced by Dr. Sayre constitutes an epoch in the treatment of this very distressing form of disease.

A Delegate—I would ask Dr. Sayre if this paper has not already been published?

Dr. Sayre—In my book just recently published, the ideas are laid down; but, as I have had so many cases since proving its practicability, I thought it my duty to bring it before the Profession.

A Delegate—I was under the impression I had read the article in a medical journal.

Dr. Sayre—The first article was a clinical lecture.

Dr. Jones, of Illinois—I recommended the same treatment.

Dr. Sayre—It was spoken of in that lecture. I believed the Profession would be benefited by it. The idea struck me as a correct one, but I had not had a sufficient number of cases to practically prove it. I always bring my new ideas to the first class I can show it to; whether it be a medical class, it gets it; if it be the State Society, it gets it; and when the ideas are important, I give them as fast as they come to me, so that the rest of the Profession can enjoy the benefit of them as they like. The Doctor refers to a lecture published two years and a half ago. That was the first suggestion. It was published by a reporter, and that is the way many things get to the Profession through the medical journals. Then when my book came out a few months afterwards, I spoke prophetically of it, saying I believed that sooner or later we should see good results from it. Since that time I have had one hundred and twenty cases, which is certainly a very different thing. And now I speak with a positiveness that the thing has been demonstrated. Another point: Sometimes you have a projecting sternum, or projecting points at other places; these you will have to guard. If there is a projecting sternum, it is better to let the patient lie on an air-bed. Before I used it I had some trouble, but since I have used the air-bed I have had none whatever. You can put in little pads and pull them out afterwards; and if you squeeze it over the hips before the plaster gets set, it does not press on the ilium.

The Chairman—The motion before you is that made by Dr. Post, that the paper read by Dr. Sayre be referred to the Committee of Publication.

Dr. Benj. Lee, of Pennsylvania—I wish to second the motion which has been made, and in doing so to express the deep interest I have felt in listening to this paper of my friend, Dr. Sayre. The idea which underlies this mode of treatment is undoubtedly the true principle for the treatment of Pott's disease. We have done wrong in considering it a purely consti-

tutional affection. We must look upon it as a surgical disease, and treat such cases much as we treat a fractured limb. It is this that Sayre has done in applying his plaster bandage. He has treated a carious spine as any one of you would treat a broken leg, and in doing so has achieved the results which he has shown you, which we must all admit to be wonderfully successful. I have not yet myself put this plan in practice. I have been so long making use of other appliances having the same end in view, have become so accustomed to them, and so well satisfied with them, that I have hesitated to make a new experiment; but after hearing the demonstration of to-day, I feel that I shall be wanting in justice to my patients if I do not at least make the effort to use it. Important, Mr. President, as is the mode of treatment that Dr. Sayre has introduced, his hints with regard to the diagnosis of the disease in its earliest stage are, it appears to me, even more so. I think he will bear me out in saying that a case rarely comes under his care which, had he seen it in the early stages, he could not have saved absolutely from the deformity which it presents. But the mischief is that these cases are allowed to go on from month to month, and sometimes even from year to year (so slow is their development) unrecognized. The doctors say: The child has gastritis or dyspepsia, or worms. I think, sir, that nine-tenths of my cases "have had worms," and they have been dosed with pink-root and santonin for months before the physician had any idea of the true pathological condition, so persistent does this idea appear to be in the minds of the Profession. Too often it is left for the parents to discover that the child has a spinal affection, while the physicians ignore it. Now, sir, I wish every member to carry away with him the very important hints which Dr. Sayre has given in reference to this matter of the diagnosis. If I may make a personal allusion, I will allude to one point in this connection to which the Doctor referred: He mentioned the fact that pressure upon the spinous processes, in a case of true spinal caries, rarely produces pain, owing to the fact that the disease is almost invariably confined to the anterior portion of the bodies of the vertebræ. In fact, if you place a patient on his face, and make pressure upon the projecting por-

tion of the spine, you naturally separate those vertebral bodies whose inter-pressure produces the suffering, and therefore, so far from *causing* pain, you *relieve* pain. Now, before Dr. Sayre, and others of his progressive tendencies, began to write on this subject, we all were taught—I know I was taught—that the diagnostic symptom in Pott's disease was that pain was produced if you pressed upon the spine. We must disabuse ourselves entirely of this impression. That classical pain does not exist in the majority of cases. Now the point to which I wish to call Dr. Sayre's attention is that I have insisted upon that fact for many years past myself, in print, and I thought that he alluded to it as not having been heretofore published.

Dr. Sayre—I did not intend to be so understood. The fact which I announced as original was that by pressure on the ribs we could detect the existence of inflammation of the articular facets.

Dr. Lee—I am glad to find that the misunderstanding was my own. This additional point in regard to the production of pain by pressure upon the ribs, communicated to the facets of the articular processes, is certainly of very great importance, and Dr. Sayre is entitled to the merit of having been the first one to introduce it. I confess that it had never occurred to me to make use of it as a point of diagnosis in cases generally, although occasionally a case of Pott's disease has presented itself complicated with so much lateral deviation that my attention has been called to the fact that there must be destruction of the articular facets. Another point which is also somewhat personal: One of the Doctor's correspondents, quoted in his paper, complimented him on his invention of the hanging machine, as he termed it, the suspension apparatus. The Doctor himself does not make any such claim, as I understand it.

Dr. Sayre—Mr. Rynders, the instrument-maker, is entitled to credit for that.

Dr. Lee—The idea of making a suspension apparatus for the purpose of suspending the body in the treatment of spinal distortions was first introduced into this country by Prof. J. K. Mitchell, of the Jefferson School, whose lectures many of you attended and enjoyed. Although most successful in his hands,

it fell into entire disuse, until, acting on the suggestion of Prof. Mitchell's son, Dr. S. Weir Mitchell, of Philadelphia, I began myself to make use of it with certain modifications. I am now, and have been for ten years, in the habit of using suspension by the occiput and chin, not as a means of placing the patient in position for the application of other apparatus by the use of the instrument of support, but itself as a means of treatment; allowing the patient to suspend or extend himself daily for a certain length of time by means of a rope passing over a pulley. I will endeavor to have one of my apparatuses here to-morrow for Dr. Sayre's use; and if I may be allowed, will introduce a patient who will demonstrate the feasibility of suspension in such a way as to make effective extension of the spinal column, thus relieving the pressure at the seat of disease.

Dr. I. N. Quimby, of New Jersey—I would like to make a further remark, and that is that it does seem to me that Dr. Sayre draws a pretty strong conclusion in saying that he believes that these cases are all traumatic. I do not know but that the Doctor is correct, and yet it seems to me that there are some spinal affections that are strumous, whatever that means; whether it has its origin in a syphilitic taint or something else, deponent saith not at present, but it seems to me to be so. I may be rather bold in presenting my opinion, but if Dr. Sayre will allow it—

Dr. Sayre—Certainly.

Dr. Quimby, of New Jersey—To say that all spinal affections are the result of blows or of some force, it does seem to me is wrong. I have had but few cases, but I could not at all detect by examination or by inquiry that there had been any injury whatever; and the patient or the parents of the patient were strumous themselves, and we know, of course, that as father so is son constantly; and hence it seems to me that there are some cases really of a strumous character that have spinal difficulty. I would like to ask Dr. Sayre whether he has been always pretty sure, from the investigation made, that all of these cases were traumatic, and whether there was not some little suspicion that they were of a strumous diathesis or cachexia?

Dr. Sayre—I believe I tried to make myself quite clear on



that point, and I know that you can have Pott's disease and have swellings of the joints in strumous patients. I never taught such nonsense in my life as that they could not exist together, and yet I have been represented as being a teacher of that doctrine. I tried to make it as clear as I could that a strumous child would have disease developed in his spine by very much less injury or force than a robust, vigorous, strong child; but that even in these strumous children, the disease requires an exciting cause for its local development. Whether from inherited syphilitic taint, or from some tubercular diathesis of his ancestors, or whatever constitutional cause there may be, I take it that if it is a constitutional affection inherited from the father or mother, it involves the whole system, eyes, head, heels, back, bones, blood, yea, his whole constitution; it is all tainted with whatever constitutional taint he has inherited. Now, what has developed it in one particular point more than in another as a localized development of this constitutional taint, is the kick, blow, rack, strain, thump, bump, or some other traumatic trouble which has been the exciting cause; that is the way I look at it.

Dr. Quimby—I would like to ask the Doctor if he finds that cases where there is a taint of struma are as easily cured as where there is no struma, or where he has positive evidence there is a traumatic cause?

Dr. Sayre—It is hardly necessary to answer such a question as that; as a matter of course every one knows it is not.

The paper was then referred to the Committee of Publication.

Dr. Sayre—On Saturday last I received a letter from Dr. James, of Maryland. I do not see him here yet to-day; he may be here to-morrow. He stated in his letter that he had a child with a diseased back. Some one recommended the Taylor brace; finding it inconvenient, he had sent it to a physician in Washington, a young doctor who had attended cases with me. On taking up my book in one of the bookstores, he had read my treatment of Pott's disease, and applied it, but not with entire satisfaction, and so he wrote to me in New York, speaking of coming there and having it applied. I wrote to him that if he would come here, he being a medical man, I would make a

practical application of it in his child's case, and by coming here he would save the trouble and expense of going to New York. Yesterday morning I received a letter from him expressing great gratitude that I was willing to meet him half way; he would be here to-day or to-morrow. If the Committee of Arrangements will find a place, I will hang the apparatus right in this room at some hour not during the session of the Section.

The Chairman—It will be proper to state, as many of the gentlemen attended the Convention at Louisville, that Dr. Sayre applied, in the presence of some members of the Profession, this supporting bandage to a child that was presented there to the Association. If there are any gentlemen from Kentucky who know anything of the results of that case, we would be glad to hear from them.

Dr. Martin, of Boston, Massachusetts, is present in the room, and informs me he has a few remarks to make in reference to a splint which he has applied several times. Is it the pleasure of the Convention to give Dr. Martin a hearing upon this subject? A gentleman has just made a remark to me that the next paper is one by Dr. Dowell, of Texas.

Dr. Quimby—I would like to make a motion just at this point. I move that if Dr. Sayre's patient arrives, we give way, and allow the Doctor to apply the bandage before this Section.

This was agreed to.

Dr. Easley, of Arkansas, said: I have listened with great interest to the paper. Dr. Sayre, and Mr. Bryant, of London, have shown us more clearly than anybody else, that there is no necessary connection between scrofula and diseases of the bones, and for this service we owe them a large debt. We have been taught that *morbis coxarius*, as well as Pott's disease, was always associated with the so-called strumous diathesis. We are now prepared to say that their occurrence is only a coincidence; in a word, that struma is to be considered a predisposing cause of the trouble, as it is of so many other pathological conditions. Highly as I esteem the gentleman's opinions, however, I fear that he is disposed to go too far in regard to the traumatic origin of the malady. It is not hard to understand how a wound, blow, or concussion may light up the disease, provided

a predisposition already exists, and no doubt spinal curvature often occurs in this way. We grant that violence may bring it on, even in the absence of a predisposing cause; but we have undoubtedly a large class of cases in which the osseous lesion is an essential disorder, a condition described as Rachitis, Osteomalacia. Here you will find the abdomen protuberant, the patient emaciated, great malaise, and vitiated tastes. The important fact is, that there is mal-nutrition of the entire osseous system, spinal curvature resulting as a part of the common distress.\*

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EXTRACT FROM THE MINUTES OF THE ASSOCIATION.

On motion of Dr. W. C. Jacob, of Ohio, it was

*Resolved*, That this Association is under marked obligations to Professor L. A. Sayre, for his admirable practical demonstration of his appliance for Pott's disease, which, indeed, marks a new era in surgical science.

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APPENDIX.

285 FIFTH AVENUE, NEW YORK, Feb. 25, 1877.

*Dr. E. S. Gaillard:*

Dear Sir,—The following case, from Dr. A. W. Redenoux, of Massillon, Ohio, is such a conclusive proof of the statement in my report, viz.: "That any one could treat this disease as well as myself, and with equally good results, if they would only follow the instructions given," that I was very anxious to have it added as an appendix to my paper, and sent it to Philadelphia for that purpose, but it arrived too late for publication.

As you have expressed a desire to republish the entire article, I will be very much obliged if you will add this case, as it is proof conclusive that these cases can be treated at home by any competent physician, without the expense and trouble of sending the poor sufferers long distances to some particular specialist, or institution devoted especially to the treatment of these and kindred deformities.

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\* Dr. Sayre applied the plaster Paris bandage to two cases of Pott's disease before the Section, with the most satisfactory results, both children being able to walk as soon as the plaster was "set."

MASSILLON, OHIO, January 22, 1877.

*Dr. L. A. Sayre:*

Dear Sir,—Last spring I wrote to you asking for information how to treat a case of Pott's disease, the result of an injury. Your son was kind enough to write me the desired information, and I now send you the accompanying photographs to show the result of the treatment.

FIGURE 45.



CASE XXIII.—A little girl nine years of age, with Pott's disease of two years' standing;

FIGURE 46.



the result of a fall; she was unable to stand without support, as seen in photograph. She had been treated by Doctor Weber, of Cleveland, O., with iron and leather braces, without improvement. After my return from Philadelphia, where I saw you apply the plaster jacket before the Med-



ical Association, I put her in the same after having suspended her, and she began to improve from that moment, and can now walk without any assistance two miles every Sunday to Sunday school, and is almost perfectly straight, as seen in photograph, and before she could not even stand.

Very gratefully yours,  
A. W. REDENOUX.

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## ECLECTIC DEPARTMENT.

“Carpere et colligere.”

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*Some Anomalous Cases of Typhoid Fever, Illustrating the Thermometrical Variations in the Onset and Course of the Disease.* By Prof. GEO. E. FROTHINGHAM, M. D., Ann Arbor, Michigan.

Although typhoid fever has been so thoroughly studied, there are still connected with it many questions of interest not yet settled, and which can only be determined by a more extended and careful observation of cases. The question of contagion in this disease is not yet decided, and good authorities still deny its contagious character, although the contribution of facts and cases have been so numerous, authentic and conclusive that it would seem that no text-book which denies this fact without fully presenting the evidence in its favor could be considered a safe guide for the student in studying this disease.

The thermometer also seems to be among the questions that have been too hastily settled by some authors, and the diagnostic rules they have deduced are altogether too arbitrary, and calculated, as I believe, to frequently mislead those not familiar with its various phases.

Thus Dr. Aitken (Science and Practice of Medicine, volume I, page 356, 2d American edition) makes the following statement in regard to the thermometry of this affection:

“When the temperature on the first or second day reaches to  $104^{\circ}$ , or where in a child or in an adult the evening temperature between the fourth and sixth days does not reach to  $103^{\circ}$ , where in the second half of the first week there is considerable abatement of the evening temperature, we have in such cases certainly not to do with typhoid fever.”

This statement is derived from the published statements of Wunderlich, but is somewhat more positive than the conclusions of that author based upon the seven hundred cases observed by him.

That the above rule applies in the majority of cases is very certain, but that the exceptions are very numerous I fully believe.

As the above teaching seems to be universally accepted, I am led to report the following facts observed by me during the past few years:

The first case I shall quote is that of B. B., a patient aged twenty years, seen by me first on March 13, 1875. This patient had felt perfectly well until the day preceding my first visit. He had no symptoms of disease whatever. On the afternoon of that day (March 12), he visited a bath house and took a warm bath lasting about half an hour. At the close of this warm bath he attempted to take a cold shower bath, but it occasioned such a spasm of the respiratory muscles that he was obliged to immediately desist. He felt no further discomfort except a slight headache until seven hours after the bath, when he was taken with a chill lasting three-fourths of an hour, and followed by a fever.

I saw him at 6 P. M. on the 13th, about twenty-four hours after the chill. The following is the record of pulse and tem-

perature, as accurately kept through the course of the disease :

March 13, 6 P. M., pulse 112; temperature,  $104\frac{1}{4}^{\circ}$ ; March 14, 10 A. M., pulse 110; temperature,  $102\frac{1}{4}^{\circ}$ ; March 15, 6 P. M., pulse 116; temperature  $104\frac{1}{4}^{\circ}$ ; March 16, 5 P. M., pulse 108; temperature  $104^{\circ}$ ; March 17, 11 A. M., pulse 100; temperature  $103^{\circ}$ ; March 17, 5 P. M., pulse 111; temperature  $104\frac{1}{8}^{\circ}$ ; March 18, 10 A. M., pulse 100; temperature  $103^{\circ}$ ; March 18, 5 P. M., pulse 108; temperature  $104^{\circ}$ ; March 19, 5 P. M., pulse 110; temperature  $104^{\circ}$ ; March 20, 3 P. M., pulse 108; temperature  $104^{\circ}$ ; March 21, 11 A. M., pulse 94; temperature  $102^{\circ}$ ; March 22, 6 P. M., pulse 86; temperature  $102\frac{1}{4}^{\circ}$ ; March 23, 12 M., pulse 84; temperature  $101^{\circ}$ ; March 24, 7 P. M., pulse —; temperature  $100^{\circ}$ ; March 25, 5 P. M., pulse 88; temperature  $101^{\circ}$ ; March 26, 8 P. M., pulse 80; temperature  $101^{\circ}$ ; March 27, 6 P. M., pulse 78; temperature  $101^{\circ}$ ; March 28, 7 P. M., pulse 74; temperature  $100^{\circ}$ ; March 29, 7 P. M., pulse 70; temperature  $100^{\circ}$ ; March 31, 6 P. M., pulse 72; temperature  $100^{\circ}$ .

April 2, 12 M., pulse 72; temperature  $99.7^{\circ}$ ; April 4, 5 P. M., pulse 72; temperature  $99\frac{1}{2}^{\circ}$ ; April 6, 5 P. M., pulse 72; temperature  $99^{\circ}$ ; April 8, 5 P. M., pulse 72; temperature  $98\frac{1}{2}^{\circ}$ .

There was not the least evidence of any complication in this case, and the symptoms were such as to mark it plainly as one of typhoid fever. The eruption appeared on the tenth day and was sufficiently characteristic. There were other symptoms also, sufficient to confirm the diagnosis.

The point of interest in this case that bears upon the matter under discussion is the sudden onset of the disease with a temperature of  $104\frac{1}{4}^{\circ}$ .

The consideration of the action of the bath in exciting the attack would be of interest, but space allows only this brief reference to it.

CASE II.—R. B. C., a young man, aged eighteen, was taken ill November 1, 1874, with no premonitory symptoms whatever. My first visit was made in the evening of that day, and the temperature was  $104\frac{1}{2}^{\circ}$ . On the next morning, the temperature being down to  $100^{\circ}$ , full anti-periodic doses of quinine were ordered and taken during the day. In the evening the temperature rose again to  $105^{\circ}$ . The subsequent course of the case

was such as to characterize it fully as one of typhoid fever. The eruption appeared on the tenth day and was abundant, appearing in successive crops. There was also diarrhoea with the characteristic color to the discharges. The case in the latter part of its course was treated by my colleague, Dr. Maclean, who also regarded it as an undoubted and uncomplicated case of typhoid fever. The patient convalesced on twenty-second day.

CASE III.—M. M., a young lady of seventeen, was taken ill August 11, 1874. The history given me was that she had felt well until a few days previous to her attack. For these few days she had felt languid, but not especially ill. On the day specified she felt chilly, and the chill was followed by fever. I saw her on the 12th at 8 o'clock P. M. The temperature was then  $104^{\circ}$ . There was no evidence of local inflammation to account for the fever. The next day at 11 A. M., the temperature was  $102\frac{1}{2}^{\circ}$ , rising to  $103\frac{1}{2}^{\circ}$  by 7 P. M.

The subsequent record showed: August 14, 9 A. M., temperature  $101\frac{1}{2}^{\circ}$ ; August 14, 8 P. M., temperature  $102\frac{1}{2}^{\circ}$ ; August 15, 7 $\frac{1}{2}$  P. M., temperature  $103^{\circ}$ ; August 16, 8 P. M., temperature  $103^{\circ}$ ; August 17, 5 $\frac{1}{2}$  P. M., temperature  $104\frac{1}{4}^{\circ}$ ; August 18, 8 P. M., temperature  $103^{\circ}$ ; August 19, 9 P. M., temperature  $104^{\circ}$ ; August 20, 5 P. M., temperature  $104\frac{1}{4}^{\circ}$ ; August 21, 7 P. M., temperature  $104\frac{1}{4}^{\circ}$ ; August 22, 8 P. M., temperature  $105^{\circ}$ ; August 23, 8 P. M., temperature  $104\frac{1}{2}^{\circ}$ ; August 24, 8 P. M., temperature  $105^{\circ}$ ; August 25, 8 P. M., temperature  $104^{\circ}$ ; August 26, 8 P. M., temperature  $102^{\circ}$ ; August 27, patient died at 6 A. M.

No post-mortem examination could be obtained, but the symptoms were such as to characterize this case as uncomplicated typhoid fever, and the only point of interest is the high temperature at the commencement.

In my own practice two other cases of this kind have occurred, one having a temperature of  $105\frac{1}{2}^{\circ}$  and the other  $104\frac{1}{2}^{\circ}$  on the second day of the fever.

A case of typhoid fever recently occurred in the practice of my colleague, Dr. Maclean, that commenced with a high temperature, and otherwise ran a remarkable course. I subjoin a few brief notes which he has kindly furnished me:



J. D., aged twenty-three, was seized with a chill on the evening of June 20, 1875. The body temperature, taken at the time, was 105°. Next morning the temperature was down to 99°, and the case was regarded as one of ague. Full doses of quinine were rapidly given and the effect obtained. Nevertheless, the evening temperature rose to 105½°. The next evening the temperature was up to 106°, and on the fourth it rose to 107°, remaining at that and 107½ until the patient's death, which occurred on the seventh day from the attack. There was diarrhœa, delirium, and great restlessness through nearly the whole attack. A post-mortem examination was thoroughly and extensively made, every important organ was examined, and no pathological change could be found except a disease of Peyer's glands. These were found thickened and vascular, and presenting the condition characteristic of typhoid fever. At the post-mortem examination several physicians were present, and all concurred in pronouncing the case one of typhoid fever.

In this case not only did the disease commence with a temperature above 104°, but after the second day the usual morning abatement was absent, and the fever continued with little variation to the end, and this too with no local inflammation to account for it, save such inflammation of Peyer's glands as is supposed always to be present in this fever.

In presenting these cases I have tried to avoid all the details not bearing especially upon this subject, my object being to call attention to this one feature, hoping to hear from others who have used the thermometer in their diagnosis of this and other affections.—*Detroit Medical Journal*.

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## CLINICAL RECORDS.

"Ex principiis, nascitur probabilitas: ex factis, vero veritas."

*Antidotal Effects of Sulphate of Strychnia in a Case of Chloral Poisoning.* By WM. M. MASTIN, M. D. (University of Pennsylvania), Mobile, Ala.

In the January issue of the "Richmond and Louisville Medical Journal" I have just read a communication from Dr. Charles

Duffy, of Newbern, N. C., relating a case of chloral and morphia narcosis successfully treated by subcutaneous injections of sulphate of strychnia; and, as an analogous case came under my observation, some months since, while House Surgeon of Wills' Eye Hospital, Philadelphia, I think it may prove interesting to the readers of your Journal to see a brief history of it, strengthening as it does the use of strychnia as an antidotal agent against the poisonous effects of chloral hydrate.

CASE.—In the latter part of the last spring a man, from the State of Missouri, with traumatic cataract of the right eye, was admitted into the Hospital for operation, but the accompanying irritation was so great that such a procedure was impossible until some weeks later, when first several needle, and finally a flap extraction, operations were performed. On his admission, he stated that he had been suffering with paroxysms of intense ciliary neuralgia, and for which I ordered the usual remedies, but without relief, until chloral was given in 30-grain doses, which kept him easy and controlled the attacks.

In one of the paroxysms (which came on in the evening) I directed a solution of chloral of the strength of  $\mathfrak{z}\text{i}$  to the ounce, with instructions to the nurse to administer one tablespoonful (thirty grains), as a dose, every two hours until his pain was relieved, or until he had taken three doses, but not to exceed a third dose. However, the three doses not having the desired effect, the nurse on his own responsibility gave three more, at intervals of two hours, making six in all or double the quantity I had ordered, and stated that it was not until after the exhibition of the sixth that he became quiet. The first dose was given at 7 P. M., and the last taken at 5 A. M.; making a total of 180 grains.

On making my morning visit at 9 o'clock, I found the patient extremely pale, with a slow, heavy respiration, and a pulse of 49 or 50, feeble and compressible; in fact he was the very picture of one thoroughly anæsthetized from chloroform. Cutaneous sensibility entirely gone, and the only evidence of reflex action was shown in the contraction of the orbicularis palpebrarum, which quivered when water was sprinkled on the face. Flagellations, shouting in the ear, and the use of the inter-

rupted current failed to arouse him. Injections per rectum of ammonia and brandy also failed to make any impression, and then as a dernier resort, one-ninth grain of sulphate strychnia was injected hypodermically. In about fifteen minutes the pallor of the face gave way to the healthy blush of life; the respirations increased from 10, to 15 in the minute—the patient making several attempts at yawning; and the pulse notably improved in strength and frequency. In the course of three-quarters of an hour to an hour, however, the former symptoms returned—pallor, slow respiration and pulse beat, and then another injection of one-sixteenth grain of strychnia was given. Again this was followed by the same favorable symptoms, which came on much sooner than did those after the first dose, and in a short time the excitement increased to muscular twitchings, and then to regular tetanic convulsions, which became most violent in character, the opisthotonos being sufficiently marked to bring the head and heels in perfect contact.

After some eight or ten spasms, it was thought best to give a combination of the sulphate of morphia and atropia to control them, and accordingly one-fifth grain of the former with one-seventy-fifth of the latter was injected under the skin. In a few moments the convulsions became notably less in frequency and much diminished in severity, until in the course of an hour or two the seizures only came after the lapse of long intervals, and amounted to but slight quivers, and then finally ceased, the patient going on to complete recovery.

The interesting feature of the case, besides the large amount of chloral taken and the happy effect of the strychnia, was the existence of two poisons, which measurably counteract each other, in the system, acting at the same time; the patient at one moment comatose from chloral, and at the next intensely convulsed by strychnia; the unconsciousness lasting even during the convulsions.

## PROCEEDINGS OF SOCIETIES.

"Etsi non prosunt singula, juncta juvant."

**Jasper County (Mississippi) Medical Society.**

The following are the preamble and resolutions adopted by the physicians of Jasper county at a late meeting :

**WHEREAS**, We, the physicians of Jasper county, Mississippi, recognize the great importance of the first great law of Nature, self preservation, and view with a feeling sense of outraged justice the unfair discrimination made between classes, and believe it to be a duty we owe to ourselves, our families, and the exalted character of our noble calling, for the purpose of self-protection, to adopt some means, as a financial relief against the present system of collecting bills ; that the votary of medicine may be rewarded for his services ; and

**WHEREAS**, We fully recognize a uniform system in business, and view with disparagement to ourselves the great advantages other professions and avocations have over the Medical in the collection of bills, securing them by lien, mortgages, or bond with approved security, refusing without pay to grant the articles or commodities desired, thus throwing the most reliable safeguards around their business, and insuring adequate means of support to themselves and families ; and

**WHEREAS**, Cash is demanded of the physician for the necessaries of life, as well as the drugs with which he plies his daily avocation ; and

**WHEREAS**, In consequence of oft repeated failures to collect a just and deserving bill in a reasonable length of time, together with the never-pay system of some, the physician is often pressed, and financially embarrassed, unable to meet the demands of his family and buy the needed appliances of his noble profession, and thus denied one of the grandest privileges of his profession, viz., keeping pace with the advance of medical science ; and

**WHEREAS**, Duty to ourselves, our families, as well as to our good patrons, demands a reformation of our present system of collecting ; and

**WHEREAS**, There are certain persons who could pay their "doctor's bill" if they did not spend their means in an unprofitable manner ; and

**WHEREAS**, They have adopted the plan of going from one physician to another, in order to avoid paying a just debt, thus defrauding the physician ; and not only that, but causing the weight to fall more heavily on those who do pay ; and

**WHEREAS**, We think it an upholding of said persons in indolence and in vice, and is unjust in the extreme, both to the physician and to good patrons ; therefore, be it

*Resolved*, That all medical accounts shall be due when the services are rendered.

*Resolved*, That in any unfortunate circumstances, or absolute inability to pay, the physician may give indulgence for a limited time.

*Resolved*, That the Society adopt a rule to require each and all of its

members to present their accounts for payment by the first of November in each year, and if said accounts are not paid within ninety days thereafter said delinquents are to be reported to the Society at its next regular meeting, and further services are to be refused by the members of this Society until said accounts are paid or secured by lien or mortgage on property sufficient in value to pay the debt, or other satisfaction is guaranteed.

*Resolved*, That each delinquent shall be notified by the Secretary that he is in arrears with such physician or physicians, and that he can not get the services of any member of this Society until such arrearage is settled.

*Resolved*, That we recognize a certain amount of charitable practice, and shall willingly, each and every one of us, do our share of said practice, but that certain limits be recognized in this, knowing that charity begins at home.

*Resolved*, That a liberal donation shall be given to all ordained ministers in pursuit of their calling.

*Resolved*, That we charge fifty cents per mile for day riding and one dollar per mile for night riding, and from one and a half to three dollars for medicine and prescription, and for detention after one hour, fifty cents per hour (afterwards).

*Resolved*, That we charge from ten to fifty dollars for all cases of obstetrics.

*Resolved*, That we charge double the usual rates where a midwife has been in attendance.

*Resolved*, That we charge the same rates in all cases of consultation, with ten dollars extra as a consultation fee.

*Resolved*, That we will not consult with, nor recognize any physician in this county who refuses to join this Society and be governed by its laws.

*Resolved*, That in accordance with the Code of Medical Ethics, we will not interfere with each others patients.

*Resolved*, That when called in an emergency to an absent physician's patient we will turn the case over to him on his return.

*Resolved*, That when called to treat a case first in the absence of the family physician, it is our case, and the family physician should not interfere except by way of consultation.

*Resolved*, That any person paying in advance shall receive the services of any member of this Society.

*Resolved*, That we charge invariably twenty-five cents for every prescription for whiskey not included in a general prescription, to be collected by the druggist, to whom we will charge it on final settlement.

*Resolved further*, That these resolutions apply as far back as 1876 and no further.

*Resolved*, That we will not patronize any druggist who prescribes for patients.

*Resolved*, That we solemnly pledge our word and honor as gentlemen to be governed by the above resolutions of this Society.

S. A. NUNN, M. D., President.

J. H. COOK, M. D., Secretary.

Present at the time of consultation, or rather adoption of

resolutions: Drs. A. H. Windham, A. M. Dozier, R. B. Donald, B. F. Dukes, J. L. Hudson, R. C. Johnson, W. J. Bailey, S. A. Nunn, President, A. J. Cotton, Treasurer, J. H. Cook, Secretary, M. E. Smith, E. W. Lyons, J. M. Byrd, Henry Izard.

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## ORIGINAL CORRESPONDENCE.

"Sic mihi Fas scribere audita."

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BARTLETT, TENN., April 10, 1877.

*Prof. E. S. Gaillard:*

Dear Doctor,—In reading to-day the surgical clinic of La Charité, delivered by Professor Velpeau in August, 1865, I was struck with the simplicity of the great surgeon's methods of treatment.

He says: "We have had only one fracture of the lower jaw. It got well without any bandage. Unless there are very great displacements, and difficulty in maintaining them reduced I abstain from applying any. The pain of the injury is amply sufficient to prevent the patient from making any injurious movements, and the consolidation is effected regularly, without the patient being condemned to an immobility which is, in itself, a real hardship."

On April 2d, 1876, I saw Coleman Harvey (colored), who had an hour before been precipitated from the framing of a bridge upon the rubbish below, resulting in the fracture of the lower jaw at the symphysis. Mobility and crepitation were decided, two of the teeth being loosened so that they might have been removed with the fingers. I reasoned about the case exactly as Velpeau had done so long before, and did nothing, save adjust the fracture and teeth, take one stitch in the flesh wound, and give an opiate. Five weeks afterward I had the satisfaction of seeing my patient entirely well, without deformity.

Allow me to quote this great surgeon's remarks upon fracture of the femur. "You have doubtless heard of innumerable machines invented for treatment of fracture of the thigh, all

having for their object continuous extension, designed to oppose shortening. Let us look at the means I employ. A crupper, round towel, embraces the ischium and is fixed at the head of the bed. A stirrup bandage at the level of the malleoli allows the fixing of two tapes, attached to the foot of the bed for extension. With this apparatus easily comprehended and applied, easy to find and to fabricate, you obtain a cure with two or three centimetres (about four-fifths or one and one-fifth inch) of shortening, and not fatiguing the patient in the least."

What a wonderful amount of suffering this simple contrivance might avert. Who is not familiar with the swellings, sloughs, tardy unions and stiff joints consequent upon the employment of the complex apparatus in common use?

Respectfully yours,

JOHN F. COCHRAN, M. D.

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KOSSE, TEXAS, April 16, 1877.

*Dr. E. S. Gaillard:*

Dear Sir,—The following short history of a case of imperforate hymen may be of some interest to the readers of your Journal: I was called April 4, 1877, to see Mrs. P. in consultation, who was described as being rather in a peculiar condition. Menstruation had never occurred. She had been treated two or three years, and finally a favorable opportunity presenting, her mother agreed to her marriage, hoping for some favorable change in her health. She had only been married a few weeks when nervous phenomena were set up, which placed her upon her bed; severe headache, lumbar pains, etc., usually attendant upon such a condition of the system. A vaginal examination permitted the introduction of the finger about one and one-half inch, the passage terminating in a kind of cul-de-sac, formed, I suppose, by her enterprising husband. No reasonable amount of force could rupture the obstruction. After introducing the speculum, a small pointed bistoury was passed through the membrane very carefully. It was found to be very thin (sixteenth of an inch, probably), but very strong and tough, and immediately there began a discharge of healthy menstrual fluid, to such an extent as to preclude any further proceedings for

that day. On the second day afterward, the operation was concluded, the membrane being so tough that the bistoury had to be used, and it was slit in different directions. There must have been between a pint and a quart of menstrual fluid recently collected, as it was healthy. The uterus was pushed far back, producing some retroflexion, but the lady has every prospect now of good health, which she has not experienced for some years past.

J. R. TAYLOR, M. D.

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MACON, MISS., April 9, 1877.

*Dr. E. S. Gaillard :*

Dear Sir,—Dr. Ghent, of Texas, mentions a case of blue vomiting, which he observed in a patient who died with hæmorrhagic malarial fever.

The comparative infrequency with which this unusual color of vomited matter is met induces me to mention two cases occurring in my practice. In one the patient, a white woman, aged about thirty-five years, died with pneumonia a few days after the blue vomit. The other was seen in a colored woman suffering with menorrhagia and sciatica; recovered.

Will some one tell us the source of the blue color in these cases?

Very respectfully,

JOHN S. FEATHERSTON, M. D.

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## CHEMISTRY AND PHARMACY.

“Diruit, œdificat, mutat.”—HOB.

**A New Method for Administering Kouso.**—Dr. Corre, in a communication to the “Bulletin de Théraputique,” says: “Many have tried to bring kouso into such a pharmaceutical shape that, while its properties as a tœnicide remain unimpaired, it may be administered without repugnance. I think the following method, which I have successfully used, accomplishes the purpose. Treat twenty-five grammes of powdered



kouso with forty grammes of hot castor oil, and afterwards with fifty grammes of boiling water, by displacement; express, and combine the two percolates into an emulsion by means of yolk of egg, and add forty drops of sulphuric ether. It may be made sweetened with syrup and aromatized to taste. This is taken at one dose early in the morning. The worm is expelled during the third or fourth evacuation, after about six or eight hours."

**Asbestos** is found in large quantities in Pennsylvania, Virginia, Maryland, and parts of Canada, though it is said to be inferior in quality to that which comes from the shores of the Mediterranean Sea. This substance was first discovered in Corsica and Italy, and applied by the ancients for a variety of purposes, prominent among which was its use in the form of a paper as a wrapping for the dead. They also made a felting of it by combining it with woody fibre and then destroying the latter by fire. The manner in which this was done is now unknown.—*New Rem.*

**Whole Ox Soup.**—In Australia, where the horned stock has increased of late in a more rapid ratio than the population, the supply of meat is much greater than the demand; and at the present time the price of cattle is commonly quoted "at boiling rate"; that is, the animals will fetch no more from the butchers than can be realized for their hides, horns, hoofs, tallow, etc., for exportation. In large establishments devoted to preparing these utilizable portions of the bullock, there was of course an immense waste when the ox went into the melting pot; but this loss is now in a great measure avoided by boiling the animal at once into soup, or concentrated extract of beef. After the head, horns, hoofs, etc., are removed, the meat is cut into convenient sized pieces and conveyed to immense steam-tight double cylinders capable of holding upwards of fifty bullocks at a time. In seven hours, during which time they are subjected to a pressure of steam of fifteen pounds per square inch, the bones and meat are reduced to a pulp. The steam is then condensed, and the tallow, which floats on the surface is drawn

off. The pulp is removed and placed in a powerful press, which squeezes out the soup. The latter is, however, not yet sufficiently concentrated; and to render it so, it is placed in a peculiarly constructed boiler, there reduced by evaporation, and finally run off into bladders. When cold the essence is semi-transparent, of a rich reddish brown color, and sweet to the smell and taste, almost like confectionery. A whole bullock, after thus being treated, yields but twenty pounds of soup.—*Scientific American*.

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## REVIEWS AND BIBLIOGRAPHICAL NOTICES.

“Judex damnatur cum nocens absolvitur.”

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ART. I.—*The Pathology and Treatment of Childbed—A Treatise for Physicians and Students*. By Dr. F. WINCKEL, formerly Professor and Director of the Gynæcological Clinic at the University of Rostock. Translated by James R. Chadwick, M. D., Clinical Lecturer on Diseases of Women, Harvard University. One octavo volume, pp. 476. H. C. Lea, Philadelphia.

Works on special branches of medical science, or on special diseases of particular organs of the human body, are more eagerly sought after by medical practitioners than works on general practice of medicine, surgery, or obstetrics. These works on special branches are generally supposed to be more particular in describing the diseases on which they are written, and therefore better adapted to the physician of limited experience, and to the student of medicine an unerring guide. Those who write these books should certainly aim to make them so, and see to it that no false teaching or ideas corrupt the leading principles on which is based the subject selected for dissertation; these principles, of course, being what is conceded to be, the foundation of all true medical science.

The work before us is written upon a special branch of obstetric science, and as far as I know, is the first that has appeared *exclusively* upon the diseases peculiar to lying-in women. It is

therefore something new, and for that reason, aside from its intrinsic merits, should commend itself to all studious physicians. It certainly supplies a want that has been felt, especially among country practitioners.

The book has some serious faults and blunders in the use of words that are confusing, and mystify the real sense of the particular sentences in which they occur. They may have been intelligible to the translator, but are not so to the general reader, unless he should understand the original language in which the text was written. They will be noticed when we come to them.

It is an omission that there was not a vocabulary appended.

The introduction, more particularly the part on the "general etiology of child-bed diseases," is well written, and the views of the author highly commendable, especially in reference to "the too early abandonment of the bed; all violent straining of the abdominal walls while in bed, such as lifting the child from a distant cradle, arranging the hair," etc.

These rules are too often violated, notwithstanding the positive order of the physician to maintain strictly the horizontal position, by the more ignorant classes of people, who can not or will not be convinced of the danger to life or suffering induced by the too early leaving the bed after parturition. Some from necessity are compelled to resume their accustomed duties before they are able, others from the force of example. Consequently we have more of these diseases to treat among this class of people, in private practice, than among the more intelligent. Just upon this point the remarks of the author are well timed, as some obstetric writers of recent date have set aside these time-honored maxims of the lying-in chamber as unnecessary, and even injurious in their observance. The strict maintenance of the horizontal position and the abdominal binder are now discarded by some writers of high authority, and the advocacy of the author of one or more of these wholesome rules is encouraging, particularly as we are not convinced that there is less danger in the breach than in the observance of these rules, as is now taught by some professors of midwifery.

The exclusion of visitors from the lying-in chamber, as advocated by the author, can not be too strongly enforced. Some

women have sustained serious injury, or at least retardation of recovery, by the imprudent visiting of over-kind friends, and more by imprudent talking of visitors. His remarks on the general treatment of puerperal diseases are much to the point, particularly his rules for intra-uterine injections, which he "conscientiously recommends."

Section 1st, chapter 1st, treats of genital lesions of lying-in women, and first of these rupture of the perineum. After well describing this lesion, dividing it into first, second and third degrees, mode of examination, and the symptoms by which it may be recognized, he goes on to describe his method of operating, inserting his sutures for superficial lacerations, "the woman upon her side in bed, the upper buttock raised by an assistant;" in deeper ruptures involving the recto-vaginal septum he places the woman upon the table in the position for lithotomy, and closes the deeper lacerations of the rectal and vaginal mucous membranes first, and then inserts the perineal sutures. He lays stress upon the "careful closing" of these deep lacerations, and insists upon "efficient assistants and good illumination." I have treated the more superficial lacerations of the perineum without sutures, by simply bandaging the legs together at the knees, constipating the bowels by opium, and keeping the patient in bed for ten or twelve days, and have no cause as yet to regret not using sutures in slight ruptures.

Our author regards the administration of opium and the use of the catheter as unnecessary in the after-treatment. We give his words:

"The administration of opium, to prevent action of the bowels for eight or ten days after the operation, is unnecessary; the same result is attained by enemata regularly every day. Reybard's suggestion, to introduce a finger into the rectum to allow the fluids and gases to escape, is surely superfluous. Simon's latest experience is favorable to a purgative treatment (ol. ricini  $\mathfrak{z}$ ii, or calomel with jalap) after operations for ruptured perineum. Constant use of the catheter is also needless, this course being called for only when passage of the urine is not readily effected in the abdominal decubitus."

The enemata he refers to as "attaining the same result," viz.,

constipation of the bowels, of course means anodyne, containing opium in some form, although he fails to tell us so. And the administration of opium is necessary therefore, either per orem or per rectum, and the former is far more to be preferred, as the channel of its administration, than the latter, both for physician and patient, to say nothing of the risk of disturbing the process of union by the daily insertion of the syringe. If the author objects to opium to prevent action of the bowels, why does he administer it by enemata? If it was objectionable in one way it would be in another. Then he can not say that opium is objectionable unless he had said it was so per orem, for certainly he means to give opium when he says "the same result is attainable by enemata regularly every day." For how could enemata attain the same result as the administration of opium unless they contained opium in some form? He fails to explain his meaning, and still more confuses the sense of the passage above quoted by referring to Simon's "latest experience" as favorable to purgative treatment.

This would scarcely be sustained, as also his advocacy of silk thread for sutures.

We pass on to "lesions of the vaginal cul-de-sac and uterus," and here comes in one of those mystifying words we alluded to in the beginning of this review. On page 91, describing symptoms, he says: "Only those symptoms concern us here which appear after delivery has been terminated. Let us then turn first to the symptoms produced by lesions of the laquear vaginæ and by deep fissures of the os uteri." Turning to Dunglison's Medical Lexicon, we find the word "laqueus," which means "a cord, a ligature, or bandage with running knots, a noose, a loop." Does the word "laquear," as used by our author, get its derivation from "laqueus?" If so, how does it apply to the vagina? Are there such things in the vagina of the human female? If so, then must all physicians be on their guard in making the necessary examination, or that unfortunate member, the index finger, would be thrown in great danger of strangulation, unless possessing in an eminent degree the "educated touch" (tactus eruditus) so forcibly described by the learned Dr. C. D. Meigs. I have searched anatomy, physiology, medi-

cal lexicons, etc., in my reach, and not a ray of light do I find to clear up the obscurity.

On page 92 he says again: "In all lesions of the vaginal cul-de-sac the general collapse commonly presents at the outset with cold extremities, a small and extremely rapid pulse, which has of late been signalized by Hecker as a very important symptom in euphoria." According to Dunglison "euphoria" means "a disposition of being affected by pain easily. Also a good state of health." Terms certainly incompatible with symptoms of collapse. As said before, these words may have been intelligible to the translator, and it is a matter of regret that he did not find plainer words to express the author's meaning.

We pass to chapter II. This chapter treats of displacements of the uterus and vagina, and is well written, and the different displacements very well described:

Chapter III treats of hæmorrhages, internal and external. Here again we find the author dealing in obscure words (page 123). After stating the causes and origin of uterine hæmorrhage, we find these words: "In other instances hæmorrhage takes place from the vessels of the placental site. The last-mentioned variety is the most frequent, and may be divided, for practical purposes, into those occurring within the first eight or ten days of childbed, and later ones, which are termed secondary hæmorrhages. The bleeding (page 125) is most commonly due to retarded involution of the uterus. The placental site is then, as a rule, the least involuted; the lumina of the vessels are not yet firmly closed."

We find in Dunglison "lumina" as the plural of "lumen," which means light. Can that make good sense? Is it an intelligible sentence with that word in it? The lights of the vessels are not yet firmly closed. If that is correct, we will have to learn anatomy over. If by "lumina" he means the dilated mouths of the placental vessels unclosed by retarded involution, then the word certainly has some other meaning besides light, as from the site of the placenta with its gaping vessels light is excluded, both ideal and real. If light enters there, then air also, and that we are told is certain and sudden death to the woman.

We might multiply these words in which the book abounds, but forbear, and pass on to the consideration of other salient points.

Chapter IV treats of inflammation of the genital organs. This is very well written, and the lesions well described, particularly the section on Puerperal Phlegmon described by others (Thomas) as pelvic cellulitis, pelvic abscess, or peri-uterine cellulitis, and, as our author calls it, "Para-metritis, Phlegmone Pelvis, Puerperal Phlegmon."

Chapter V. Puerperal Thrombosis and Metastatic Pyæmia. In this chapter he first describes thrombosis of the uterine veins, and under the head of symptoms, after describing the often-protracted suffering of metastatic pyæmia, he says: "At other times the process comes to an end much more speedily. An embolus may lodge in the pulmonary artery, producing dyspnœa, distress, cyanosis, opisthotonos and sudden death" (page 256).

The use of the word in this connection is an inexcusable blunder. It does not belong to the symptoms of embolus, but is a condition of tetanus from rigidity of the spinal muscles. He certainly means orthopnœa, which is inability to assume the horizontal position from extreme dyspnœa. He describes more fully the symptoms of this affection in an appendix "on the causes of sudden death in childbed."

He neglects to state the treatment for this distressing and dangerous condition of the lying-in woman, although he says the patient may live "an hour or more." Death is usually sudden in these cases, sometimes perhaps less than in one brief hour. But it is the duty of the physician, if he reaches his patient in time, or is present when these symptoms arise, to do something to relieve the distress and suffering. The carbonate of ammonia in large doses (grs. x) every hour has been recommended by a writer in the "American Journal of Medical Sciences," and the liq. ammoniæ and iodide potassium.

He next speaks of thrombosis of the veins of the leg in puerperal women, phlegmasia alba dolens, crural phlebitis. This is a better definition of this condition, the so-called milk-leg,

metastasis of milk, etc., as described by some of the older writers.

We pass on to the seventh chapter, in which he describes in "a historical sketch the theories hitherto prevailing of the nature and causes of malignant puerperal fever." This occupies thirty-seven pages, is well written, his positions well maintained, and is the best chapter in the book.

This completes the first Section. Section 2d treats of diseases of the breasts.

*Chapter I—Diseases of the Nipples.*—Of these he makes several varieties which he well describes. Speaking of treatment, he advises the weaning of the child as the only sure means of cure, as, however well directed the treatment may be, the repeated application of the infant to the breast greatly aggravates the disease, while it is perfect torture to the already suffering woman. If one nipple only is diseased the child should be allowed to take the sound breast only.

In the two succeeding chapters he treats of inflammation of the breasts, and advises the weaning of the child or confining it to the sound breast where only one is affected, and "there need be no fear that congestion of the affected breast will thereby be prolonged or recovery retarded." There seems to be among nurses and mothers more or less fear of congestion or stagnation of milk in the breast already diseased if the child is not allowed to draw the breast. And it is astonishing how they screw up their courage to allow the child to take a nipple or breast so much inflamed that the slightest touch is torture to them. The advice of the author and the treatment recommended are very judicious. He objects to the old worn-out remedy, the poultice, advises free painting with tinct. iodine and the evacuation of the pus when fluctuation is evident. He mentions other very appropriate remedies which we can not notice here, but pass on to the consideration of other points of interest. In the remaining chapters of this section there is nothing worthy of special note. In the chapter on irregularities of the lacteal secretion he speaks of what he calls a "milk-powder" for arrest of the secretion, viz, "pulv. sem. fœnic. magnesiæ carb. pulv. cort. aurant. sacch. albæ." This he recommends to bring on the



flow of milk after it has been arrested. It is worth a trial at any rate, as it is harmless.

Leaving the remaining chapters, we pass on to the third section of the book and take up the subject of greatest importance, eclampsia of puerperal women, found in the fourth chapter. On this subject there has been much controversy of late as to the causes and the treatment. Our author in treating the subject mentions "two recent antagonistic theories—the so-called uræmic theory, propounded by Frerichs; and the theory promulgated by Traube and others, according to which eclampsia has no connection with disease of the kidney, except so far as anæmia and the predisposition to eclampsia are increased by albuminuria." It will be seen from the examination of these theories by the author that those who advocate the first believe that retention in the blood of the products of renal secretion is the cause of the eclampsia. Experiments on animals have proved that this will not produce convulsions.

"It is quite certain, therefore," says the author, "that the theory of Frerichs is not applicable to all cases of eclampsia, and it is very doubtful whether it can be adopted in an any case whatever." He adopts the other theory (of Traube) and deduces two causative agents—"anæmia and increased arterial tension." Uncertainty still clouds the subject, and he expresses the hope that "as a thoroughly satisfactory explanation has not yet been found, additional light may be thrown upon the subject by carefully conducted clinical experience and research."

The author's remarks on treatment are rather vague. He speaks of bloodletting and drastic purgatives and diuretics; among the latter, "tartaric acid, lemon juice, and flowers benzoin." It is difficult to conceive that these are diuretics at all, at least not drastic certainly, or that they can have any effect whatever in so dreadful a disease as eclampsia. He seems to have entirely overlooked those potent agents now so much in vogue—chloroform, hydrate chloral, and bromide potassium. Locally he recommends "sinapisms," which would scarcely be felt in the profound coma which usually attends the disease. The cantharidal plaster would do better. The "cold compresses and ice-bags" are appropriate.

We pass on to the last chapter, which treats of puerperal skin diseases, which he enumerates as "erysipelas, scarlatina puerperalis, variola puerperalis, and the septic diseases of the skin, erysipelas, scarlatina miliaris, miliaria crystallina." This chapter might well have been left out, as these diseases, except the last (miliary fever as described by Churchill), can scarcely be supposed to exist. The identity of erysipelas with puerperal fever has been under discussion of late but I am not sure that it is established. Puerperal erysipelas may arise from infectious contact with the woman in labor, or after parturition by the examination of the physician, or may be conveyed in his clothing, but to describe it as a distinct puerperal disease is of doubtful propriety. So with other skin diseases of an infectious nature. There is nothing in the act of parturition to give rise to skin diseases. If they are conveyed to the woman by contagion they are no more puerperal diseases than when conveyed to a woman not in child-bed. Such at least is my opinion, and I venture to differ with the author on that point.

The book has some pleasant features. The most prominent is the record of cases interspersed at convenient points.

It is well printed in clear large type.

F. E. W.

BOOKS AND PAMPHLETS RECEIVED.—A Series of Clinical Lectures. Edited by E. C. Seguin, M. D. Vol. III. No. 2, Hydrocele. By E. D. Hayes Agnew, M. D.

Annual Report of the Supervising Surgeon-General of the Marine Hospital Service of the U. S. Service for the fiscal year 1875. John M. Woodworth, M. D., Washington. 1876.

The One Hundred and Seventh Annual Report of the State of the New York Hospital and the Bloomingdale Asylum for the year 1876. New York. 1877.

The Mortality of Surgical Operations in the Upper Lake States. By Edmund Andrews, A. M., M. D. Chicago. 1877.

The United States Pharmacopœia and American Medical Association. This pamphlet will be sent to any physician who will enclose address and a three-cent stamp to Dr. H. C. Wood, 1631 Arch St., Philadelphia.

Transactions of the Nebraska State Medical Society at its Sixth, Seventh and Eighth Annual Meetings.

Syphilis and Chancroid. By P. H. Bailhache, Surgeon U. S. Marine Hospital Service.

The Medical Science and Profession—Commencement Address before the Trustees, Faculty and Graduating Class of Miami Medical College. By Rev. N. West, D. D.

Explorations in Cell Pathology. By Robert S. Newton, M. D.

The Toner Lectures, instituted to encourage the discovery of new truths for the advancement of medicine. By E. Brown-Séguard, M. D.

College of Physicians and Surgeons of New York. Medical Department of Columbia College. Seventh Annual Catalogue 1877.

Seventh Annual Report of New York Ophthalmic and Aural Institute.

Orkney Springs, Shenandoah County, Va.

Buffalo Lithia Springs, Mecklenburg County, Va.

Report of Yellow Fever as it appeared in Savannah, Ga., in 1876. By Octavius A. White, A. M., M. D.

## MISCELLANEOUS.

*"Non omnes eadem mirantur ament que."*

**Explosive Compounds.**—Two more instances of unexpected decomposition, accompanied with some degree of violence, have lately been brought to our notice. The first happened with iodide of strychnia; a bottle, in which some of the salt had been long kept, was held near the fire, to warm the glass and loosen the stopper. An explosion suddenly occurred, scattering the glass and badly wounding the hand. The other accident was related by Mr. B. F. McIntyre, at a meeting of the Alumni Association of the New York College of Pharmacy. On distilling essential oil of bitter almonds over nitrate of silver, to

free it from prussic acid, toward the end of the operation the material in the retort violently exploded, breaking all the glass apparatus in the proximity, but doing no further damage. Neither explosion can be very easily explained; in fact, few explosions can, except in a general way. In regard to the iodide of strychnia, it is supposed that the substitution compound had formed, on decomposition, some iodide of nitrogen, in a somewhat similar manner to the production of that substance when iodine is treated with an excess of ammonia. As to the reaction which occurred between the oil of bitter almonds and argentic nitrate, it may be said not to be altogether extraordinary, as the silver is known to readily form explosive compounds with a number of organic substances. The only wonder is that no mention has been made of it before this time, for the rectification of the essential oil over nitrate of silver is not an infrequent operation, while it seldom happens that one has occasion to heat old iodide of strychnia.—*Scientific Amer.*

**Tracheotomy Performed Four Times within a Few Years upon the Same Patient.**—At a late meeting of the Clinical Society of London ("British Medical Journal," February 17, 1877), Mr. Pugin Thornton brought forward a case of syphilitic laryngitis, in which the operation of tracheotomy had been performed four times. The case was remarkable also from the skin of patient's face presenting a discoloration very similar to that produced by the long-continued administration of nitrate of silver. The patient, aged sixty-seven, a foreman in large horse-stables, contracted a chancre in 1867.

**Impossibility of Certain Luxations in the New-Born Infant.**—At a late meeting of the Vienna Society of Physicians, whose proceedings we find published in the "Allg. Wiener Med. Zeitung," March 13, 1877, Dr. Hofmohl delivered an address on traumatic luxations of the new-born. The conclusions at which he arrived, after a number of experiments, and a study of the views of other writers, were that luxations of the the jaw, shoulder, elbow, and hip can not occur in the recently delivered fœtus. The articular tubercle being absent, luxation

can not take place at the maxillary joint; the relation of the insertion of the capsules to the diaphyses prevents dislocations at the hip and shoulder joints; finally, the lateral ligaments at the elbow joint are at this time so remarkably developed as to entirely prevent any unnatural movements at that joint.—*Cin. Clinic.*

**A Picture Impostor.**—He operates specially among physicians. He deals in very fine photographs on paper boards twenty-two by twenty-eight inches, medallion or circular centres, which he represents to be elaborate India-Ink drawings by himself, which he offers at a reduced price, as he must close them out and return to London, etc. He is a smart, plausible, genteel little fellow, and thrills you with the beauty of his wonderful productions before he displays them. His \$25 to \$88 pictures cost but \$1.25 to \$2.00 each, and are published by Charles Cooper & Co., of New York. The Philadelphia police would be glad to hear from him from any source. Look out for him.—*Phil. Med. Times.*

**Ring Sickness.**—This is not dissimilar from sea sickness; it requires long experience in a ring to overcome the nausea consequent upon going round and round in one direction. One of the most difficult things for a circus-rider to overcome is this sickness. Clowns and ring-masters suffer from it greatly, at first, from merely seeing the horses go round and round; but even after years of experience, a ring-master (whose principal business in the ring is to keep the horses up to a certain gait, and not merely to give cues to the clown), if a horse balks or gets behind time, and he is obliged to keep close upon him, is very likely to suffer from a pronounced fit of sickness at the stomach after he leaves the ring.—*Ex.*

**Colored Skin-Grafting.**—Dr. J. H. Wm. Meyer ("Chicago Medical Journal and Examiner") records two cases of ulcer of the leg upon which skin-grafting was successfully performed. Upon each the experiment of using grafts from the Negro was made, and upon recovery the cuticle resulting from the transplantation preserved the black color.

**The Peabody Buildings and the Health of London.**—The Peabody Donation Fund is undoubtedly destined to exert, not only an appreciable, but a marked effect upon the health of London. The health of London is, and must be, judged by the health of its large majority of the working classes; and the health of the working classes is, to a larger extent than is generally acknowledged, governed by the sanitary condition of the houses and tenements in which they live. The Trustees of the Peabody Fund have just issued their report for the year 1876, which contains many points of interest bearing upon the present benefits enjoyed by the working classes from the Fund, and upon the prospect of constantly increasing benefits in the future. Thanks to the great and generous American.—*Brit. Med. Jour.*

**Cirrhosis of Liver in a Boy aged Fourteen.**—Dr. Thomas Hayden showed the viscera of a boy, aged fourteen, who had general dropsy with marked ascites. Passive pleural effusion occurred, and necessitated thoracentesis. On repeating the operation, the fluid was purulent. After death, the right lung appeared compressed and carnified; the pleura was thickened. The pericardium was firmly adherent to the anterior surface of the heart, which was small. A calcareous plate existed in the pericardium, and passed into the substance of the heart itself. The liver was nodulated; its connective tissue was increased; its cells fatty. The kidneys were granular. The urine had been frequently tested and found free from albumen, of moderate specific gravity, and excessive in quantity. The atrophy of the heart, in the presence of an adherent pericardium, was doubtless due to the long-continued cachectic state of the boy's system.—*Brit. Med. Jour.*

**An Interesting Collection.**—A collection of drawings by the late Sir Charles Bell, says the "British Medical Journal," have been sold recently by Messrs. Christie and Manson. They were all studies, numbering about seventy, and exhibiting considerable artistic power. The prices obtained for them were very low, varying from two to six guineas for each lot!!

**The Antizymotic Treatment of Diphtheria.**—Dr. Pavese describes in the "Anali Universali di Chimica Applic. alla Medicina," a formula which he recommends in the treatment of diphtheria. It is founded on the antizymotic properties of chloral, salicylic acid and the sulphites. It is as follows: **R**—Chloral hydrate, salicylic acid, glycerine, sulphite of soda, each  $1\frac{1}{2}$  parts; distilled water,  $3\frac{1}{2}$  parts; spirits of wine, 1 part. The whole is put into a strong glass vessel, which is closed, and exposed to a heat of  $100^{\circ}$  to  $120^{\circ}$  Fah. for a few minutes, until the sulphite, salicylic acid, and chloral are completely dissolved. A homogeneous solution is produced, which is filtered through bibulous paper, and preserved in a well-closed vessel. It is an oily, limpid, colorless liquid, having the odor of its constituent parts. It is insoluble with water. On the application of proper tests, the chloral, salicylic acid, sulphite of soda, and glycerine are found to be unchanged.

Used both internally and externally, it is an energetic antiseptic, antifermentative, disinfectant, hæmostatic, and preservative, as well as a destroyer of parasitic organisms. Dr. Pavese says that it may be used as an antiseptic, and also as a sedative, in a large number of diseases.—*Lond. Med. Record.*

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## MEDICAL NEWS.

'Nulla dies sine linea.'

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Professor Lister, of Edinburgh, has declined the offer of the vacant chair of Sir William Fergusson in King's College, London.—A recent number of the "British Medical Journal" states that Dr. G. and F. E. Hoggan have recently discovered the long looked for lymphatics in striated muscle.—By the last statement on this subject it is apparent that the percentage of recoveries from ovariectomy at the Samaritan Hospital (Spencer Wells'), London, is greater than ever before, fifty-five cases with only five deaths. Wells operated forty times with only four

deaths. — It has become manifest that the best method of saving the lives of pauper children is not by placing them in hospitals or asylums, but by "boarding them out." It is simply substituting private care and often affection, for the ordinary care of paid nurses in public institutions. The philanthropist as well as the physician should bear these facts in mind for the good of the most helpless class of every community; abandoned pauper children. — At Shanghai, China, there has been manifested a new species of womans' rights; the right to stand upon the street and sell human milk as it is wanted; fresh from the font. Can not this fact be generally made known and the shrieks of this class be made thus practically satisfactory to somebody. — There are more illegitimate births in Germany than in France; in Prussia twenty births in every 1,000 are illegitimate; in lower Austria 305 of every 1,000; in France the proportion is seventy in 1,000. This is unexpected news. — The distinguished Pasteur has demonstrated that all green preserved vegetables and fruit are poisonous; the green coloring is produced by using a salt of copper. — *Cholera.* — This disease has appeared with great violence at Akyab in British India; 25 per cent. of the European population died in thirty hours. — The Statue to Liebig will certainly be erected; £7,000 have been already collected. Russia has contributed the greater portion of this sum. — Anti-hydropin is the name given to a crystalline substance extracted by Dr. Bogomolow, of St. Petersburg, from the alcoholic tincture of the domestic cockroach. He says the tincture acts in the very best manner as a diuretic in dropsy and secures the best results. He has used it in Bright's disease, cardiac disease, and other complaints where dropsy was a prominent symptom. He has always had the best effects from it. Unlike the tincture of cantharides it never produces strangury. — *Lengthening the Lecture Term.* — The friends of the University of Michigan, and of medical education generally, will be glad to learn that this institution has decided to lengthen its lecture term to nine months. From what we can understand, there is to be a gradation of the studies similar to that now in operation at Harvard. — *The Progress of Hippophagy.* —



Since the siege of Paris the quantity of horse meat consumed in that city has increased yearly.—*American Gynaecological Society.*—The second annual meeting of this Society will be held in Boston, on May 30, 31, and June 1, 1877. Papers are expected from the following gentlemen: Dr. Fordyce Barker, President; Drs. Robert Battey, Van de Warker, W. T. Lusk, G. H. Lyman, J. C. Dalton, W. L. Richardson, W. Goodell, R. A. F. Penrose, J. B. Chadwick, and many others.—Dr. Hammond has in preparation—"On the Influence of the Maternal Mind over the Offspring During Pregnancy and Lactation." By William A. Hammond, M. D., Professor of Diseases of the Mind and Nervous System in the Medical Department of the University of the City of New York.—Dr. Mary Putnam Jacobi's new work on "The Question of Rest for Women During the Period of Menstruation," is nearly ready. It will be illustrated with fifty sphygmographic traces, showing the variations in arterial tension, and will contain the results of 250 urea analyses of urine.—*An Excellent Example.*—The County Medical Association of Madison County Iowa, having resolved not to bid individually for the pauper practice of the county, made an appeal to the Supervisors to make the Society an offer to attend the county poor. This was done, and the offer accepted. The labor is equitably arranged among the members, and the proceeds paid into the treasury of the Society, to be expended for books, etc., as shall be decided by vote.—Dr. Wm. B. Atkinson has been appointed, by the faculty of the Jefferson Medical College, lecturer on diseases of children, in the Summer Association of the College.—Dr. J. W. Freer, a distinguished Chicago physician, and for a long time president of the Rush Medical College, of that city, died recently, aged sixty-one years.—A meeting of the Provisional Association of American Medical Colleges will be held at the Palmer House, Chicago, on Saturday, June 2d, 1877, at 10 o'clock, A. M. All colleges represented at the meeting of the Association held June, 1876, are invited to send delegates to the ensuing meeting, and all chartered medical colleges in the United States recognized as "regular" by the colleges already represented in this Association, are also invited to send delegates from their

Faculties to the said meeting. J. B. BIDDLE, M. D., President.  
—A Roman society for the defense of family principles, says the "Medical and Surgical Reporter," has just awarded the civic crown to a lady named Mme. Bouilett, who has given birth to her thirty-sixth child.

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## EDITORIAL.

"Nullius addictus jurare in verba magistri."—Hoz.

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**Editorial Miscellany.**—The mortality of surgical operations in the upper Lake States is the modest title of a pamphlet recently published by Dr. Edmund Andrews, of Chicago. The author is well known as the Professor of the Principles and Practice of Surgery and of Military and Clinical Surgery in the Chicago Medical College, and as the author of excellent contributions to the Medical Press of this country; his paper on the comparative mortality of anæsthetic agents is well remembered by all interested, and other papers have been most fully appreciated and valued. His present pamphlet is a very able one. In 123 pages he has condensed the available statistics of the medical world on the mortality of surgical operations. To each section he has added a table of entirely original statistics gathered laboriously in the Lake States, and has given a résumé of the opinions of the greatest authors on the value of the different operations and the conditions requiring them. In this résumé he has directed attention prominently to the contradictions and antagonisms of the chief surgical authorities, and has added his own views in regard to the facts furnished. His investigations have demonstrated some very curious and unexpected results. He finds that in the Lake States the major amputations and herniotomy are considerably more safe than they are elsewhere, while lithotomy is more dangerous. The material for this pamphlet has been most laboriously collected, and it is said that only has been accepted which has been furnished by those of known honor and integrity. The volume,

as it is issued, is believed to be the best in the English language. As a guide in prognosis, in decisions in regard to operations, in forensic surgery, and in the instruction of medical students, it will deservedly occupy a high position. It is certainly highly creditable to the energy, research, and ability of its distinguished author.—The valuable article of Dr. Sayre in this number has necessitated the omitting of much valuable material ready for the Press; it is simply delayed, however, and will soon appear.—The newspaper reports of the proceedings of several State Medical Societies have been received; notices of the points of interest will be made when the official Transactions are issued. The cursory reports of the secular Press are often erroneous, and sometimes mischievous and unjust, and it is believed that notices based upon the official volumes are most likely to be of service to the Societies and to the Profession.—The next meeting of the American Medical Association will be held in Chicago (Farwell Hall), commencing Tuesday, June 5, at 11 o'clock A. M.—The next meeting of the Medical Colleges' Convention takes place in Chicago at the Palmer House, beginning Saturday, June 2d, 1877, at 10 o'clock, A. M.—The Governor of Kentucky has reappointed Dr. C. C. Forbes Medical Superintendent of the Insane asylum at anchorage. Dr. Forbes has discharged his duties with great fidelity, is most acceptable to those having transactions with the Asylum, and his reappointment is highly complimentary to himself.—Tennessee has passed a law creating a State Board of Health; this is now the fifteenth State having a Health Board. Kentucky will next be added to the list.—Lord Napier, of Magdala, Governor of Gibraltar, states that the erection of a single building in India where sound sanitary principles were carried into effect saved two regiments of men; the death rate of the place had been  $9\frac{1}{2}$  per cent., but this single building has reduced the rate to  $2\frac{1}{2}$  per cent.; saving 7 per cent. by this single piece of reform. Those who expect to try and "hammer a little sense" into the obtuse brain of the average legislator can use this fact.—In a valuable paper read recently before the New York Medico-Legal Society by Dr. Edward G. Loring, of Boston, there are some interesting and instructive facts; he points out that the

bad air of public school buildings produces diseases of the conjunctiva as well as diseases of other mucous surfaces. By this single neglect of hygiene grave ophthalmic lesions are produced. He recommends that the spaces between the lines in all school books should be fully one-eighth of an inch, and that the type should be "broad-faced," giving thus a bold, clear impression upon the page. He condemns the paper so often used now for books; he says "pure-white paper, such as is ordinarily used in this country, should never be employed, most of all when it has a metallic lustre;" this "metallic lustre" is produced by what is termed "calendering" the paper, giving to it great hardness and a satin-like, highly-reflecting surface. It is astonishing how many medical editors who ought to know better, and who do know better, send out their journals printed on white paper, so "calendered" as to be positively injurious to the eye. Dr. Loring recommends a delicately tinted paper without the calendered surface. The paper used for this Journal, when exposed to light in an ordinary office for a few weeks, assumes almost a neutral tint, with a delicate rose color remaining. It is neither glazed nor "calendered," and is made exclusively for this Journal and for the Bi-Weekly. The tint, and the absence of all gloss (which dazzles and injures the eye) have given much satisfaction.—Receipts for money sent will hereafter be always found in the next number issued.—As "the flag" now "waves over States, not over Provinces, over freemen and not over subjects," the era of political peace and pecuniary prosperity seems to have fairly arrived. The despondents have taken heart again, and no one can doubt that, with active labor and judicious energy, the doctors, like all others, will soon realize, once more, the happiness of peace and plenty. In a Journal office, peace for the editor depends upon plenty for all who work for him, and in working for him they work hard and faithfully for the reader. This being clearly understood, who will defer payment?—The next number will contain a valuable illustrated paper by Dr. J. Marion Sims.

**Editorial Puffing.**—Generally speaking, when medical journals claim to refrain from puffing advertisers, they mean what

they say, and try to accord their practice with their precept. Occasionally, however, the voice of the tempter is too strong, and they are bought with the price of a puff. An enterprising firm of pharmacists of Boston has recently been successful in this way with some of the most respectable journals in this and other cities. As a strictly business arrangement on the part of the firm it is good enough; but what can we say for such "independent" journals who are bought with such a price? From personal experience with the repeated overtures from this particular firm, we assert that they never advertise on any other condition, and that consequently the appearance of an editorial notice in every journal in which the advertisement appears is by no means a coincidence.—*N. Y. Med. Record.*

The "enterprising firm of Pharmacists" to which the Record thus alludes in its issue of April 28 is the House of Billings, Clapp & Co., of Boston. This Journal, with many others, truthfully claiming to be "independent," published the advertisement of this Boston House, and inserted, as did many other "independent" journals, in the body of the work, a notice in regard to it. The notice consisted of a certificate of independent judges and impartial experts, who, after the closing of the Centennial Exhibition, gave to this "enterprising firm of Pharmacists" a testimonial handsome in character, and believed by the judges to be just. This Journal has carried the advertisement of that House for several years, and has never during that period, or on the occasion to which the Record alludes, received a cent for any editorial notice. Indeed, since January, 1866 (the date of its foundation), up to date, this Journal has never received a dollar for editorial notices, and while often approached has uniformly refused all advertisements, the offer of which was based directly or indirectly on any agreement in regard to editorial notices. When these are given, there is no fee either charged or received; and they are given or withheld, as seems to the editor just and useful.

Can the Record say as much; and is it not straining at a gnat, while it has often swallowed a camel? Most probably there is not a medical journal in this country which has received a cent for the very just notice to which the Record refers.





*Crawford W. Long M.D.*

DISCOVERER OF ANAESTHESIA

Demonstrated on James M. Venables by the use of Sulphuric Ether  
at Jefferson, Jackson Co. Georgia, March 30<sup>th</sup> 1842.

RICHMOND AND LOUISVILLE

# MEDICAL JOURNAL.

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[No. 6.

## ORIGINAL COMMUNICATIONS.

“Qui docet discit.”

ART. I.—*Tracheotomy in Diphtheria.* By J. H. POOLEY, M. D., Professor of Surgery in Starling Medical College, Columbus, Ohio.

I am indebted for the notes of the following case, except the description of the operation, to Dr. G. M. White, of this city, who had charge of the patient:

CASE I.—“Edward F., aged eight years and five months, returned from school at noon, Friday, October 1, 1875, complaining sorely of pain in the left side of his neck, immediately below the ear; chilled for two hours. The chill was followed by an exceedingly high fever. Pulse 160; temperature not taken, but the heat of the skin was far in excess of the most violent case of scarlatina I ever saw; very little swelling on the left side of the neck. Left tonsil slightly enlarged; complained of severe pain in swallowing even fluids. Pharynx, soft palate, and tonsils of a bright scarlet color; very fiery in appearance. Violent pain in the head, and burning sensation in the throat. No perceptible deposit. Ordered opiates, diaphoretics, and a gargle of solution of chlorate of potash in warm elm-water.

*Saturday Morning.*—Rested well during the night; no complaint of pain; skin moist; pulse 120, soft and weak; tongue coated. There is a thin fibrinous deposit on the tonsils and posterior part of the soft palate. Ordered tinct. ferri chloridi m. v. every three hours; quinia sulph. gr. j. every three hours. Gargle continued. Passed the day and night comfortably.



Sunday, Monday and Tuesday, he improved each day, asked for and took food, and rested well. The indications all were that he was convalescing. The fibrinous deposit on the tonsils and soft palate had thickened a little, and changed from a fine white to a buff color. Pulse continued at 120, full and moderately strong; breathing regular and easy. Up to Wednesday noon there were no indications that the larynx was involved; during the afternoon, however, the voice became a little hoarse, the cough sharp and ringing—croupy. Pulse increased to 140; lungs free. During the latter part of the night the patient was restless, and suffered a little difficulty in breathing.

Thursday morning breathing became easy, and the pulse fell to 120, but rather feeble. Exhibited stimulants and nourishment freely. Patient comfortable all day, and continued so until midnight. The air of the room was kept moist with the vapor of warm water; hot applications were applied to the throat and chest, and nauseant alkalies and stimulants were given freely.

At midnight Thursday, the breathing became very labored, and continued so until Friday morning, when for a short time it became easy after coughing up some shreds of membrane. About 9 A. M. Friday the breathing again became very labored, and swallowing performed with difficulty; pulse 120; apparently there existed no obstruction below the larynx."

I first saw this child about 1 P. M., on Friday, October 8, one week from the beginning of its illness. He was lying on his back, with the head retracted, in a soporose condition approaching coma, with intervals of extreme restlessness. He was breathing with difficulty, and with a noisy, croupous inspiration; considerable movement of the larynx and top of the sternum in respiration; he was pale and slightly bluish about the finger nails. Pulse 120, full and of good resistance.

Auscultation afforded no clear and reliable evidence as to the condition of the lungs. Upon consultation with Drs. White and Loving, tracheotomy was decided upon, as the child would evidently die very soon as he then was, and the operation offered him the only remaining chance for life, slight indeed, as we all realized it to be. This was fully stated to the parents,

and they desired the operation to be performed. I accordingly operated. The child was laid upon a table of convenient height, in a good light, and his head well thrown back by a roll of old cloth placed between the shoulders. Chloroform was administered, and the preliminary part of the operation was almost bloodless. After dividing the skin and superficial fascia there were a few fibres at the top of the wound, which it seemed desirable to divide more completely. Before doing this, I plainly saw a large vein crossing the upper angle of the wound, and filling itself with each inspiration. I ought to have drawn this out of the way, but neglected to do so, feeling sure that I could avoid touching it with the knife. By some movement of the child, or of the larynx, or otherwise, it got in the way at the critical moment and was cut through. A terrible gush of blood followed, and before this was fully restrained I was obliged to open the trachea; then came another torrent of blood, pouring directly into the trachea. The child ceased to breathe, and for a few moments we all thought he was dead. I immediately applied my mouth to the wound and sucked several large mouthfuls of blood and mucus out of the trachea, while the other gentlemen kept up artificial respiration, and in a minute or two we had the satisfaction of seeing the breathing re-established and feeling the pulse once more at the wrist.

This accident shows the necessity of the utmost care in drawing out of the way any veins that may make their appearance in this operation. The tube was now introduced, not without difficulty, showing that the trachea itself was to some extent occupied by the false membrane. The conclusion of the case I give in the words of Dr. White.

"Respiration was comparatively easy for an hour or two after the operation, when it again became difficult, from extension probably of the diphtheritic exudation. Patient took stimulants freely but rapidly grew worse, and died at 7:45 P. M."

A post-mortem examination could not be obtained.

CASE II—On Friday, September 29, 1876, I was called to see Herman B., of this city, aged five years. He had been sick for two weeks with what was regarded as a very severe sore throat, but had had for most of that time only domestic treatment. Two

days before I saw him their ordinary medical attendant, a homœopathic physician, was called in; he had been in attendance up to a short time before my first visit, when he said that he could do no more for him, and advised that I should be sent for.

I found the child in his father's arms, breathing with considerable difficulty, respirations being rapid, shallow, and noisy; he had a loud, harsh, distinctly croupy cough; his skin was hot and his pulse rapid, but not particularly feeble; there was slight duskiness of the countenance, a thin, flaky, excoriating discharge from nostrils, swelling of the tonsils, and of the lymphatics at the angle of the jaw. He had no appetite, and refused to swallow anything but cold water. On looking into his throat it was seen to be red and swollen, with patches of diphtheritic exudation on each tonsil. I advised the immediate administration of an emetic of sulphate of mercury (turpeth. mineral), and prescribed in addition a mixture containing chlorate of potash, muriate of ammonia, and tincture of iron, to be taken every hour after the operation of the emetic.

I saw him again in about three hours, the emetic had acted well, brought away large quantities of mucus, and a good-sized semi-cylindrical piece of false membrane. He seemed relieved, and was breathing much better; I directed the continued use of the mixture mentioned above, and a repetition of the emetic if his breathing should get worse again.

*Saturday, September 30.*—He had been worse again in the night, and the emetic as recommended had been given, with the effect of bringing up a still larger piece of membrane than before, and numerous shreds. After this he was very much relieved, and his parents were quite jubilant over the result. Even when I saw him, which was about 9 A. M., he was very much better, and was breathing with comparative ease; mixture, as before to be given regularly every hour, and the room to be kept full of steam.

Later in the day he was not so well, dyspnoea returning, but not with its former severity; treatment continued, and as he looked rather feeble, and his pulse was weaker and more rapid, whisky punch to be given frequently.

*October 1.*—He has passed a wretched night, sleeping but little; his father obliged to walk the floor with him all night. Rather better at my morning visit, but still breathing very badly, and unable to lie down.

I saw him again in the afternoon, he was much worse, difficulty of breathing extreme, each inspiration accompanied with a strange and painful grin, and aided by strongly grasping his father's shoulder; face suffused and becoming cyanotic. I stated to the parents that the child could not live many hours as he then was, and that I had nothing further to propose except the operation of tracheotomy, to which they immediately acceded. Accordingly at 4 P. M. I operated, assisted by Drs. Starling Loving, and T. C. Hoover. The child was placed on a table suitably arranged, and an anæsthetic mixture of alcohol, chloroform, and ether, as recently advocated by Dr. J. C. Reeve, of Dayton, Ohio, administered. The child struggled very much against being laid upon the table, and against the anæsthetic, which was very carefully administered by Dr. Hoover, whose trustworthiness in such an office I have frequently tested. He could not have breathed more than a few drops of the mixture before he suddenly ceased breathing and seemed to be dead, his mouth fell open, his eyes glazed, and his pulse ceased beating; his heart did not cease to beat I think at any moment, but pulsed feebly. I rapidly opened his trachea, and inserted a large-sized tube. The windows were thrown wide open; artificial respiration was set up, his tongue drawn forward, and the lips and interior of the mouth bathed with strong brandy. Some feeble respirations soon followed, but his pulse could not yet be felt, and the surface of his limbs and body was cold. A number of hot irons were placed about him, and he was warmly covered. The means already in use, especially the artificial respiration, were kept up, his breathing gradually improved, and as soon as he could swallow brandy and water were given to him by the teaspoonful. At length, after many anxious minutes, he made two or three long, deep inspirations, followed by a convulsive cough, in which he threw out through the tube a mass of false membrane, which presented a nearly perfect cast of the epiglottis and vocal cords. After this his breathing

became natural and easy, but he was very much exhausted for several hours, so much so that he was left lying on the operating table.

I do not think that this patient's dangerous and nearly fatal condition was brought about solely, if at all, by the anæsthetic, but mainly or altogether by the constraint exercised in placing him in the horizontal position in his nearly asphyxiated state, and against which he struggled violently. I saw him again late in the evening, still lying on the operating table, quite revived, and fretting for his father, who had been banished from the room. I took him on my lap and rocked him, and in a few moments he fell asleep. I then laid him in a bed prepared for him, and without waking up he turned on his side, curled up his knees and slept as quietly and sweetly as any child in the world. I left him in charge of my student, Mr. John B. Fleming, with directions to keep the tube free, the air moist with steam, and let him sleep as much as he could, giving him a little whisky punch whenever he awoke.

*October 2.*—He slept well all night, and this morning seems very comfortable; respiration easy and noiseless; very little accumulation in the tube; prescribed a mixture containing chlorate of potash and cubebs; ordered the room to be kept warm, about 80°, and the air moistened with steam; allowed any nourishment he would take. Pulse 100. Membrane has disappeared from the tonsils; less discharge from the nose.

*October 3.*—Patient doing finely; seems stronger than yesterday, but has not taken any nourishment; sleeps a good deal, but quietly and naturally, as though recruiting his thoroughly worn-out nervous system; ordered continuance of treatment with sweetened whisky and water. I removed both outer and inner tubes. The wound looks perfectly well, and he breathes without difficulty, even when the wound is covered. After a few minutes the tube was returned.

*October 4.*—Everything progressing favorably. There has been more accumulation in the tube; some discharge around it. He begins to ask for something to eat. The tube was taken out and cleaned; it was left out a little longer than yesterday. Taking it out caused a slight oozing of blood and some suffoca-

tive cough; the wound looks slightly inflamed. Continued treatment.

*October 5.*—The patient is getting along finely. I took out the tube and left it out for three-quarters of an hour. A suture was removed from the lower angle of the wound, which still looks a little inflamed. He eats well; sits up looking out of the window, and busies himself with his toys. His pulse is stronger; his nasal discharge has ceased. He looks pale, and though bright and cheerful is quite weak; prescribed iron, tinct. ferri chloridi ℥j, syrup lemon ℥iii; a teaspoonful three times a day.

*October 6.*—To-day at 11 o'clock A. M., I removed the tube permanently. When I visited him at 7 o'clock in the evening, I found that he had had one or two rather alarming attacks of dyspnoea, which, however, were relieved by cough and expectoration through the wound. His breathing is accompanied by slight whistling, not increased by closing the opening. He can breathe through his nose with lips as well as the opening in the trachea closed, but is evidently most comfortable with the wound open. It is astonishing to see how rapidly the opening has diminished in size, nearly one-half in a few hours. After some hesitation, I decided not to re-insert the tube, believing that the slight disability of the vocal cords, whether from swelling or paralysis, would pass away, and perhaps all the sooner if they were subjected to the stimulus of the contact of air. His voice is stronger than at any time since the operation.

*October 8.*—To-day the patient's parents had quite a severe fright. The wound has closed up very rapidly during the last two days, and at night, when the child went to sleep, his breathing became very noisy and a good deal embarrassed, and the father sent for me to see about re-introducing the tube. I found that though the breathing was noisy and difficult, it did not interrupt the child's sleep, and became quiet and easy as soon as he was thoroughly waked up. I decided that it arose from paresis or weakness of the vocal cords, and the rapid closure of the wound, and did not re-introduce the tube, but prescribed quinine and strychnia.

*October 11.*—Child going on perfectly well; breathing reg-

ular and easy; wound nearly closed; voice becoming audible.

*October 13.*—Patient virtually well; voice completely restored; wound nearly healed; looks a little pale and thin.

*October 16.*—Visited the patient to-day, and found him sitting at a table with his brothers eating peanuts and carrying on like a young rowdy. He greeted me with quite a shout. The wound is healed, and he is perfectly well in every respect, except that he remains rather pale and weak; is to continue his iron for some weeks.

Such a case as this is a sufficient reward for many unsuccessful efforts. This child was obviously snatched from impending death. Without tracheotomy a few more hours would have closed his career. A large share in this most gratifying result must in justice be attributed to his father, who, after his first nervousness and fright, proved a most invaluable nurse. He watched his child night and day with an intelligent assiduity which, alas, we can rarely command. If we could, I feel persuaded that the statistics of tracheotomy would present a much more encouraging aspect. In scarcely any operation is judicious and skillful care and nursing afterwards more important than in this. It seems to me considerable risk was run by the very early removal of the tube on the fifth day in this case, and I should hardly be encouraged to do it again. With a less watchful and reliable nurse, I should certainly have re-introduced it on the night of the 8th, when his breathing became so seriously embarrassed. Fortunately this proved only temporary.

*CASE III.*—On Thursday, October 5, 1876, I was called at 4 o'clock P. M. to the child of Mr. M., aged three years, in consultation with their family physician, Dr. A. Neil, of Columbus. He had been sick several days with sore throat and cough, but only during the last two days had there been any difficulty with his breathing. When I saw him dyspnoea was extreme and constant, the breathing being shallow, rapid, and noisy. He had a hoarse, croupy cough; his pulse was rapid and weak. There were several patches of diphtheritic false membrane on his tonsils, and I was informed by Dr. Neil that this deposit had been much more extensive. He was a pale, weakly-looking

child. He had been taking large quantities of ipecac to procure vomiting, but without effect. I prescribed an emetic of turpeth mineral, proposing to return as soon as I could make the necessary preparations, and if he had not been notably relieved to perform tracheotomy; to this the parents readily consented, being convinced that unless something could be done to relieve him their child had not long to live.

It was after 6 o'clock by the time I returned; the emetic had produced no effect, and I at once prepared to operate. The evening was dark and cloudy, and as daylight was rapidly failing, I was obliged to operate by the light of kerosene lamps, and having never done so before, I soon found that I had never realized the serious disadvantage of this necessity. The child's neck was short and fat, which made the wound correspondingly deep, and nothing could be plainly and satisfactorily distinguished. However the operation was safely accomplished, though it took more than twice as long as I had ever known it to do before.

The hæmorrhage was slight, and mostly confined to the last incision, by which the middle lobe of the thyroid, which could not be got out of the way, was divided. I was ably assisted by Drs. A. Neil, N. C. Reed, and Professor Wheaton of Starling Medical College.

The child did not seem to be at all prostrated by the operation, and when it recovered from the effects of the ether breathed easily and well. There was marked relief of the distressing dyspnoea.

It continued to do well until the afternoon of the next day, Friday, the 6th, when the breathing again became rapid and difficult, and the lungs seemed to be filling up; scarcely any respiratory murmur could be heard, though on percussion the resonance was good. It was freely stimulated, and an attempt made to throw warm spray of lime water in through the tube, which gave some relief, but it died a little after midnight, at 12.15. Post-mortem was held Saturday, October 7, at 4 P. M. Rigor mortis strongly marked. Only larynx, trachea, and lungs were examined. Wound of operation in median line, dividing first three rings of the trachea and middle lobe of the



thyroid. Rima glottidis completely occluded by false membrane and inflammatory swelling of the mucous membrane. Membrane extended below the point of operation, but not in a continuous tube, only in shreds and patches. The lungs did not collapse on opening the chest; the right showed marks of pressure against the ribs. They were crepitant throughout except part of the lower lobe on the left side, which was congested. Bronchial tubes, to their minutest ramifications, were filled with bloody, frothy mucus. Child died of capillary bronchitis. Ten days after the death of this child a younger brother, fifteen months old, died of diphtheria, which did not involve the respiratory passages, at least not to any serious extent.

CASE IV.—I was called at midnight, on Sunday, October 8, 1876, to go to Commercial Point, twenty-two miles from my residence, to see a child with diphtheritic laryngitis, for the purpose of performing tracheotomy, if judged necessary. I arrived at the house about 3 o'clock next morning. Found that the patient, a fine, stout-looking girl of five years old, had been sick for about two weeks with sore throat, and occasional attacks of dyspnoea, which for the past two days had been constant, and increasing in severity. There had been patches of false membrane visible in her throat, but at the time of my visit there were none to be seen.

When I first saw her she was lying in bed with her head thrown back, breathing very noisily and with great difficulty; she had not slept for two days and nights, was very restless, tossing about in bed at intervals and frequently asking to be taken up.

I operated at 7 o'clock in the morning, assisted by Drs. Samuel and Joseph Helmick, and Dr. Tipton. Ether was given, and as the operation was somewhat protracted, at its conclusion she was nearly asphyxiated, and when the trachea was opened seemed for a moment to be quite so. This was probably from the sudden effect of the free ingress of air so long cut off.

I passed a gum catheter through the tube into the trachea to seek for possible obstructions, and finding none, used it as a means of inflating the lungs by blowing into its free end. This

answered the purpose admirably, and is, it seems to me, an expedient to be strongly recommended in such an emergency. In a minute or two the child revived, and coughed a large piece of false membrane into the tube, from whence it was withdrawn by forceps. After this her breathing was very much relieved, indeed perfectly easy, and she soon fell asleep, for the first time in many hours. When I left she was perfectly comfortable; her pulse was good; expression of face in sleep and aeration of the blood all that could be desired, and everything from which an opinion could be formed, as far as the condition of the patient was concerned, seemed to promise a favorable result. But I was not sanguine of success, for the surroundings were not such as to admit of the kind of care necessary in such cases, and of the importance of which I have the highest possible opinion. She continued to do well until Wednesday, the 11th, when she became worse. She had a severe and protracted attack of crying and screaming, her breathing became again difficult, her temperature high, and she sank and died, as Dr. Samuel Helmick, the attending physician, thought, from extension of disease to the lungs. No post-mortem could be obtained.

I have not reported these four cases so much on account of any interest they may have in themselves as for the sake of drawing attention to the operation of tracheotomy as a life-saving measure, for the purpose of averting threatened death from dyspnoea in pseudo-membranous inflammations of the larynx and trachea, whether they be called croup or diphtheria. This operation would seem to be established on so firm a basis as no longer to need any recommendation or advocacy, and yet in some parts of the country it is regarded with general disfavor, and even in some quarters bitterly opposed. If we attempt to make an appeal to authority, we are met by a difficulty in the very outset, for many authors make a distinction between what they call true membranous croup and diphtheritic croup, and their distinctions are so arbitrary, uncertain, and ambiguous that it is by no means easy always to tell which or what they are talking about. I myself believe that the two diseases, so-called, are one and the same thing, differing only in minor and unessential particulars, if at all. We read of epidemic

croup. What is that but diphtheria? And then again we have sporadic cases of laryngeal diphtheria, which, according to some, we must call croup and not diphtheria. This, I confess, seems to me a kind of scientific thimble-rigging, "now you see it, and now you don't."

Epidemics of diphtheria differ markedly in the number of cases in which the air passages are involved, and also in the severity of what may be called the toxic phenomena of the disease; the constitutional symptoms.

Hillier says (*Diseases of Children*, p. 141), "I can detect no difference between membranous croup, and laryngeal diphtheria." Dr. Jacobi, of New York, whom I regard as the best authority on the subject, says that there is no conceivable ground for the distinction; and in an article in the "*American Journal of Obstetrics*," for February, 1875, uses the following language:

"Thus if anatomy and physiology mean anything, I hope the vexed question of croup or diphtheria in the larynx will be considered as settled." Other authors, who still hold to this old distinction without a difference, are evidently struggling hard with doubts, and we can not help thinking that the time will soon come when the essential unity of the two diseases will be generally acknowledged.

But be this as it may, it has only a subsidiary importance for our present object, for as Holmes aptly says (*Surgical Diseases of Children*), "it seems to me that for surgical purposes, it will be better to consider the diseases that are spoken of as croup, diphtheritic croup, and diphtheria, under a single aspect."

And those voluminous authors, Meigs and Pepper, though they have a long article under each title, evidently recognize the fact that whatever force the distinction may otherwise have, it has none as bearing on the question of operation, for they refer their readers for indication for its performance in diphtheria to the article "Croup." Indeed, why there should be any distinction made here is hard to say, for whenever tracheotomy is undertaken in either disease, admitting for argument's sake that they are two and not one, as we firmly believe, it has the same simple sole object—to avert impending death from

suffocation. It may be contra-indicated by intense poisoning of the system, which renders death almost certain, even if the asphyxia be relieved, though all authorities, as we shall presently see, are not of this opinion.

I have heard it said that it should not be performed in laryngeal diphtheria, for the false membrane is sure to spread to the trachea or even the bronchi, but this is evidently assuming for an individual case what no one can possibly know beforehand, for it is not true as a rule, abundant experience having proved that no such invariable, or even perhaps general rule, can be established. The second case narrated in this paper is one in which the false membrane was almost certainly limited to the larynx. And even if such a rule were proven, it would not contra-indicate the operation, for many patients have recovered after tracheotomy where such was undoubtedly the case.

Dr. Jacobi was the first in this country to draw attention particularly to this subject, which he did in an able and elaborate paper published in the first number of the "American Journal of Obstetrics," May, 1868. In this paper he gives the statistics of New York operations—213 in number with 50 cures, or 23½ per cent. What I have seen of the operation, though very little, comparatively, is fully as favorable as this.

Meigs and Pepper give the Philadelphia operations—28, with 6 cures, 21.4 per cent. The whole number of operations in all parts of the world up to date of his paper was, according to Jacobi, 1,024 with 220 recoveries, or 21.48 per cent.

Now when we consider that of these recoveries very few would probably have taken place without it, and that the operation itself involves very little danger to life, and furthermore, that when it fails to save life it makes death less terrible, both to the patient and to the friends, it seems to me that we have said enough, and the question might well be considered as settled without further words.

Indeed, I do not hesitate to endorse the statement of Hillier, who says: "When it is remembered that nearly every case in which tracheotomy is resorted to would certainly die if left to itself, if a much smaller proportion than one in four, even one in fifty, could be saved, the operation would be justifiable."

This same author says elsewhere: "To avert death by asphyxia, when other measures fail, or if death is imminent, recourse is to be had to tracheotomy. I would recommend this operation whenever there is a decided and persistent distress from want of air, with laryngeal respiration, and increasing recession of the chest walls, and not of the neck in inspiration, if it is not relieved by an emetic. It is not well to wait until lividity sets in; at the same time, however near death the patient may seem to be, if laryngeal obstruction is the probable cause, the operation is to be recommended, with the understanding that the case is a desperate one, which can not be made worse by an operation, and that there is the remotest chance of success from an operation."

Meigs and Pepper recommend the operation, except in case of profound general diphtheritic infection, where the danger of the child depends upon the constitutional disease, even more than upon the laryngeal obstruction.

But even under this most unfavorable of all conditions many experienced operators still defend tracheotomy. Jacobi asserts that whenever the indication of suffocative dyspnoea, steadily increasing and not relieved by emetics, exists, he would operate despite any complications, general diphtheria or anything else, and uses this positive language: "Seeing a person suspended by the neck and being strangled, we should hardly investigate the propriety of cutting the rope from the point of view that the sufferer might be or is affected at the same time with tuberculosis, cancer, or diabetes."

In his latest publication on the subject, Contributions to the Pathology and Therapeutics of Diphtheria ("Amer. Jour. Obstetrics," February, 1875), Dr. Jacobi says that although his success with the operation has not continued to the same extent as when he wrote his first article, he still advocates it. These are his words: "Since 1868 I have saved but a small percentage of suffocating children, and still I can not but stand by my former indications for the operation. It must not be omitted when obstruction in the larynx threatens to be the cause of death by suffocation. No complication of disease or epidemic influence ought to be a contra-indication."

Just here we need to remember, as I have already stated, that epidemics of diphtheria, as of all other epidemic diseases, vary so widely that we need constantly to take heed, lest we allow the want of success of any plan of treatment in a given epidemic to dictate our general judgment as to its advisability.

Steiner, ("Compendium of Children's Diseases"), advocates the operation, and says: "The prognosis is dismal, a fatal result being almost the rule, for in tracheotomy alone there seems to be any chance of recovery. In the Children's Hospital at Prague 34.6 per cent. of the affected children have been saved by the operation." (About the worst statistics that can be found anywhere). He gives the following indications for its performance. "The emetics must be repeated on the occurrence of any suffocative attack as long as they seem to afford any relief. As the emetics lose their effect the indications of threatening asphyxia become more and more apparent, and the necessity for tracheotomy is exhibited." Lawson Tait, Steiner's translator, endorses the measure. As is well known, Trouseau, Bretonneau, and the French writers generally advocate the operation, and their early experiences with it were of the most discouraging character.

Not to multiply needlessly references and quotations, we may say that the drift of modern authority is almost universally in favor of the operation, and I can only add my own opinion, formed independently of authority, and held long before I had put it in practice, that no child ought to be allowed to die of laryngeal obstruction, from diphtheria or any other cause, without tracheotomy, while even if it does not save life, it lessens the terrors and distress of death by progressive strangulation. I have had parents, who had lost a child after the operation, to say to me, "if I had another child similarly affected and knew that it also would die after the operation, I should still insist on its being performed." In this connection, and in concluding this part of my subject, I can not refrain from quoting the strong language of Professor Flint, in the last edition of his Practice of Medicine. "With reference to the propriety or importance of the operation, however, the simple question is, are lives ever saved by it? This question is undoubtedly to be an-

swered in the affirmative. The question, how many lives are saved, is of less importance in its practical bearing. If lives are ever saved by tracheotomy or laryngotomy in diphtheria, a practitioner is reprehensible if he allows a patient to die from laryngeal obstruction without opening the larynx or trachea. The patient is entitled to the chance of being saved by an operation, however small that chance may be."

Let us now consider the operation itself, and the after-treatment of those cases in which it has been performed for diphtheria of the larynx. And first, I would say that I can not regard it as so simple, almost as trifling a procedure as some appear to do. On the contrary, it seems to me a serious and often a very difficult operation, and though I have now operated a good many times, I find this feeling growing upon me. Bryant, in his "Practice of Surgery," expresses my views upon this subject so exactly and so well that I can not do better than to quote his words; he says, p. 145: "Tracheotomy is by no means a simple operation. In very young children it is always troublesome; under all circumstances it is a delicate one, requiring coolness and caution. When performed hurriedly, it is too often made difficult, and even dangerous." "The surgeon may at times be called upon to be rapid in his movements, but he ought never to be hurried; as the result of hurry many are the mistakes that might be enumerated, such as wounding of the innominate or carotid artery; the opening of the œsophagus through the trachea; the puncturing of the spine through both these tubes, etc."

Some authors, and among them Mr. Pugin Thornton, in a recently-published monograph on tracheotomy, forbid the use of anæsthetics; but though it is not to be denied that some inconveniences attend their use in these cases, where the patient's breathing is already seriously interfered with, still I think that with due care they are both admissible and advisable. I have never operated without, except in one case where the child was so nearly asphyxiated as to be insensible to the knife, and where even the delay of administration might have been fatal. To be useful, pretty thorough anæsthesia must be induced, but the condition of the surface should be carefully watched as well as

the state of the breathing, and if it becomes cyanosed the ether or chloroform must be suspended. I have used ether, chloroform, and an anæsthetic mixture of the two with alcohol in three cases, and prefer ether, as I feel safest with it, nor can I see any compensating convenience in the others to make up for what I regard as an increased risk. The head should not be thrown too far back, lest this interfere with respiration, but only just enough to render the trachea conveniently prominent, and care should be taken to maintain the same amount of retraction throughout.

The greatest attention should be given to keeping the wound of operation, both in its superficial and deeper parts, strictly in the median line; any deviation from this is fraught with danger, and leads to perplexity in the mind of the operator, which once experienced is hardly ever recovered from, and makes his task a most anxious and difficult one.

I am in favor of a free external incision, generally two inches in length, its conveniences are many, and I fail to see any good argument against it. If it is found to be too large after the introduction of the tube, a stitch or two above and below is all that is needed.

It is a matter of more importance to avoid as far as possible the extensive separation of the parts below the skin, and this is more easily guarded against when the external incision has been free. Any veins that get in the way should be gently drawn aside by blunt hooks, a pair of strabismus hooks answer this purpose admirably, but there should be no unnecessary pulling aside of other tissues, for thus the median direction of the operation is easily lost, more easily than inexperienced operators would believe.

Two or three rings of the trachea should be divided, as high up as possible, and to accomplish this we may go either above or below the middle portion or isthmus of the thyroid. I do not think this a matter of much importance. I have done both, and in some cases have not known which, for the thyroid body has not been recognized in the operation at all. If it interferes, and can not be got out of the way, unless some conspicuous vessel is plainly seen in it, the middle portion of the thyroid



may be unhesitatingly divided; bleeding from it is not much to be feared.

It is certainly desirable that all bleeding should cease before the trachea is opened; and too much stress should not be placed on the entrance of air following the opening in arresting the hæmorrhage. Blood may pour into the trachea before respiration is established, and if this is large in quantity it is one of the worst accidents that can complicate a tracheotomy. But on the other hand, if the patient is becoming asphyxiated, as will often be the case, the trachea must be opened at once, regardless of every other consideration, and artificial respiration established. Just here, I doubt not, patients are sometimes lost by dawdling and pottering.

While hurry and confusion are to be avoided, prompt and fearless action is imperative.

If the trachea be opened in the midst of considerable bleeding, as must sometimes be done, the patient should be turned over on the side that the blood may run out of, rather than into the trachea, the tube inserted, which acts as a tampon to the wound, and breathing and cough encouraged by every possible means. In opening the trachea it is an excellent plan, sometimes absolutely necessary, to fix it and draw it toward the surface by a sharp hook or tenaculum thrust into it between the rings. Sometimes when it is not deep, nor drawn rapidly up and down in respiration, this may be unnecessary, in which case the forefinger of the left hand should be passed into the lower angle of the wound and down upon the trachea as a guide to the knife, and pressed partially into the opening as it is made. Various forms of dilators have been invented to be inserted into the windpipe and facilitate the introduction of the tube; they sometimes answer a good purpose, but a reliable assistant holding the edges of the tracheal wound apart with strabismus hooks is better, and even without this by following the direction to keep the left index-finger on, or as nearly in the wound as possible, the introduction of the tube is rarely a matter of difficulty. When real difficulty occurs in introducing the tube it generally arises from the presence of false membrane in the trachea, which may either fill it up, or, not having been pierced

by the knife, be crowded before the tube. I have known a case where the tube was lodged between a cast of false membrane and the trachea, and thus the child instead of being relieved was only the more rapidly choked to death by the operation.

The moment of opening the trachea is always a critical one; a moment of supreme anxiety to the operator. And when at last it is accomplished the patient may seem to be gone, or with the first in-rushing of air he may cease to breathe. But this must never be accepted as final. His asphyxia, this cessation of respiration, though perhaps the most terrifying of accidents to a novice, is one of the least dangerous after all. It is very seldom fatal; with promptness and perseverance almost never. We must make sure of the patency of the tube and of the trachea, for which purpose a gum elastic catheter, which should always be included among the tracheotomy instruments, is best adapted, and is also very useful in inflating the lungs. If much blood has entered, it may be sucked out through the catheter, or by the mouth applied directly to the wound, as in Case I of this paper. Mucus will generally be coughed up; pieces of membrane must be looked for, and if seen removed with curved forceps.

In these cases of suspended respiration we must not be too ready to give up in despair and accept defeat; success generally rewards persevering efforts, more especially in keeping up artificial respiration. Success has finally rewarded these efforts even after the lapse of a very long period of time; in one recorded case after three quarters of an hour.

A most essential requirement in tracheotomy is to have a good supply of light, and yet we are sometimes obliged to operate by artificial light, and it may be of a very poor quality too. No one who has not tried it can realize how this enhances the difficulties of the operation. On such occasions a coal-oil lamp with a good reflector would be of the greatest service; where this can not be obtained its place may be supplied by a small looking-glass, obtainable almost anywhere, and held in a suitable position by an assistant so as to concentrate the light upon the wound.

Take it altogether, tracheotomy in diphtheria is as difficult

an operation, and presents as many dangers, complications and emergencies as any in surgery; it needs above everything else a cool head and a stout heart.

The treatment of these cases after operation is of the greatest possible importance. Want of a due recognition of this fact at one time led to the most discouraging want of success, and wherever it prevails will still vitiate the result of the best performed and most promising operations. It does not include many points, but those it does include are of imperative moment. Care of the tube comes first, and this should be entrusted to the most reliable person that can be secured. When it is possible a competent medical man (one who has seen such cases, is to be preferred), should be within easy reach, for the first few days at any rate. Patency of the tube must of course be maintained, and it must be cleaned out often enough for this purpose with a feather, brush, piece of soft rag held in a pair of curved forceps, or other suitable means, care being taken that whatever is used is not dropped into the tube. There is considerable variety in the kinds of tube in use; only two things seem to be of real importance, that the tube should be a double one, and that its parts be very firmly joined together. Tubes of hard rubber are objectionable, as the junction of the tube with the shield which passes over the neck weakened by constant contact with discharges may give way, and the tube slip down into the air passages. I know of at least one accident of this kind. The child after tracheotomy is to be kept as quiet as possible, all sources of irritation, or even of pleasurable excitement should be kept away. An even and somewhat high temperature should be maintained, as high as  $75^{\circ}$  or  $80^{\circ}$ , and the air of the room should be kept moderately charged with steam or watery vapor. The room should not be swept or dusted while the patient is in it. A supporting treatment, with plenty of food, fluid for the first few days, afterwards as varied as the patient can take, with free alcoholic stimulation when required, is to be recommended. This is the simple routine, but as important as it is simple; attention to these few rules rather than the use of a multitude of remedies will secure success, if success be attainable.

Of special drugs I have none to recommend, except perhaps cubebs, which latterly has seemed to me to accomplish to some extent the desirable end of retarding or preventing the reformation of the false membrane.

Though my own success has been no ways remarkable, I am, as will be seen, a strenuous advocate for tracheotomy in diphtheria. I believe when faith in it is more general, and it is done more frequently and in due time, and the immense importance of the after-treatment is properly appreciated, it will save multitudes of lives that would otherwise be lost.

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ART. II.—*Subinvolution of the Uterus.* By B. B. BROWNE, M. D., Baltimore, Md. [Read before the Clinical Society of Baltimore, March 2, 1877].

Normal puerperal convalescence includes the restoration of the pelvic organs to their normal state, which during gestation and parturition have been the seat of extraordinary modification in tissue, function and position. During the period of uterogestation the uterus enlarges from about three inches in length and one and three-quarters in breadth to twelve or fifteen in length and nine or ten in breadth. It increases from about two ounces in weight to twenty-five or thirty ounces. Its cavity before impregnation is less than one cubic inch, while at the full term of pregnancy it is extended to above four hundred cubic inches, and the surface of the organ increases from about five or six square inches to nearly three hundred and fifty square inches. The reduction of the uterus after delivery to its normal size, its involution as it is termed, takes place by muscular contractions, fatty transformation of its component fibres and absorption. The celerity of its involution in the puerperal state is more striking and remarkable than the celerity of its evolution during the pregnant state. For while the uterus takes forty weeks to acquire its dimensions at the full term pregnancy, it requires only from six to eight weeks to decrease to the small size of the organ in its unimpregnated condition.

If the conditions necessary for involution are interfered with

or impeded subinvolution will be the result. This condition may be caused by a great number of diseases and accidents that are liable to occur during the puerperal state. For, however easy and healthy the pregnancy and delivery may have been, however happily they may have run their course, yet every lying-in woman is in a high degree predisposed to puerperal affections. The pathetic utterances of an old gynecologist, Chambon de Montaux, that woman is a being whom nature has, through all ages, allowed to walk upon the edge of an abyss that is ever ready to swallow her up, surely has a peculiar significance in childbed. For who is not familiar with those extremely rapid diseases, which within a few days or even hours, carry off the strongest women in their very prime, so that with amazement and terror he beholds their sudden end—the instantaneous and unexpected disappearance from the family circle; and of that more numerous class who escape this fatal termination, how great is the number of those who lead a life of living death, the result of puerperal diseases?

The puerperal diseases causing subinvolution of the uterus may be divided into two classes: 1. Those occurring during parturition. 2. Those occurring during the period of involution or the six or eight weeks following labor. Among the first class may be enumerated: Laceration of the cervix uteri and contusions of the uterine tissue, often caused by the maladministration of ergot to bring on uterine contractions before the os is sufficiently dilated and when the waters have already escaped; portions of retained placenta and coagula interfering with the proper contraction of the placental site and uterus; partial or complete laceration of the perineum and vestibular lacerations. Among the second class we may enumerate secondary hæmorrhages, prolonged retention of urine, constipation, improper application of the binder, rising too soon after confinement, displacement of the uterus, puerperal fever, and the non-performance of the function of lactation.

The natural function of lactation is the best and most healthy stimulus to uterine involution. The application of the infant to the breast causes contraction of the uterus. Lactation is the physiological compliment to parturition, and by causing a de-

rivation of activity to a distant organ, tends to promote rest in the pelvis. Dr. Barnes considers the increasing neglect of the function of lactation to be a prolific cause of uterine disease. He says that this neglect does not always arise from indifference to maternal duties, or the fancied more imperative duties of social life, but that the inability to suckle is in numerous cases real. The system, the breasts want the power, the capacity to secrete milk, showing the unfitness of women nursed in luxury to carry out in its completeness the function of reproduction.

Laceration of the cervix uteri from parturition causes subinvolution of the uterus in lateral laceration, in consequence of the irritation of the flaps which separate when the woman assumes the upright position. Dr. Emmet states that if this accident occurs from very rapid labor or from the use of forceps with considerable traction, the perineum is at the same time frequently ruptured, and with this there is a want of proper support to the uterus; it gets down upon the floor of the pelvis, and with the prolapsus there is also some degree of retroversion, so that when the woman attempts to walk the flaps are forced far apart, the posterior lip catching in the cul-de-sac and the anterior lip is crowded forward.

In subinvolution from this cause there will be more profuse leucorrhœa, menorrhagia, backache, pains down the limbs, difficulty in walking, and the uterus will be more congested and irritable.

Displacements of the uterus are a frequent cause of impeded involution, for when either retroversion, retroflexion or prolapsus occur, free circulation through the uterine vessels is necessarily interrupted, a sufficient amount of arterial blood may pass into the organ, but the return by the veins is obstructed by the tortuous course and angulation produced by the displacement.

The evil effects of an incomplete abortion in causing subinvolution are either immediate or more remote. The immediate risk is in the occurrence of hæmorrhage and the retention of fragments of the placenta and clots in the uterus; when a foreign body is thus retained, the uterus becomes decidedly hypertrophied, so that when it is finally evacuated the walls may remain permanently thickened and the cavity enlarged. When

this condition exists the organ frequently becomes displaced. Such imperfect involution may easily be the starting point of other morbid changes, and many women who come under treatment for uterine diseases can trace back the commencement of their suffering to an abortion in the early months of gestation. Another cause of subinvolution of the uterus is quickly repeated pregnancy, where before the uterus is thoroughly renovated it is called upon again to undergo development.

Retarded in its metamorphosis by any such influences, the uterus does not undergo perfect involution, the fatty degeneration and absorption of its muscular fibres are incompletely performed, or newly-formed tissues—muscular elements, and particularly connective tissue—are developed to such a degree as to leave the uterus considerably larger than normal. In many cases of areolar hyperplasia from subinvolution the uterus is bound down by adhesions to the pelvic viscera.

In order to avoid a more tedious detail of the various causes and effects, complications, symptoms and treatment of subinvolution of the uterus, I will give the record of the following cases:

CASE I.—June, 1875. Mrs. H.; aged thirty-three; married ten years; has had one child eight years ago; no miscarriage since; has a great deal of pain in the back and a feeling of discomfort in the lower part of the abdomen, with a sensation of weight and bearing down of the uterus, considerable pain in the lower part of the bowel and irritability of the bladder, and pain and aching extending down the limbs; a very profuse leucorrhœa. During menstruation the pain and disagreeable feelings are increased in severity and are accompanied by intense headaches lasting two or three days; the trouble has continued since the birth of the child. The uterus was enlarged, retroverted and hypertrophied, caused by subinvolution and areolar hyperplasia; there was also enlargement of the cervix with ulceration and erosion. As soon as the ulceration and congestion were somewhat reduced a suitable pessary was adjusted to support the organ in its normal position. After about three weeks' appropriate treatment the uterus was reduced to its normal size. She was relieved of her suffering and discharged cured.

**CASE II.**—June 25, 1875. Mrs. G.; aged thirty; married nine years; four children and one miscarriage; last child five months old. Suffering from general debility, pain and weakness in the back, heaviness and weighty feeling in the lower part of the abdomen, irritability of the bladder and leucorrhœa. Attributes her trouble to her first confinement, when she got up too soon and took cold, and had a chill and fever afterwards. Uterus large and flabby, somewhat prolapsed and retroverted—relieved by treatment, afterwards became pregnant, and expects to be confined about the middle of March.

**CASE III.**—April, 1876. Mrs. E.; aged twenty-eight; married six years; two children, youngest six months old; has been suffering from uterine hæmorrhages since the birth of her last child. Pressing-down pains in the lower part of her abdomen, difficult micturition and excessive weakness. Uterus large and flabby, and bleeds upon the slightest touch, is prolapsed, measures four and a half inches with the probe. Diagnosis retroversion with hypertrophy and areolar hyperplasia from subinvolution. The hæmorrhages were checked by the administration of a combination of ergot, digitalis and tincture of iron, with occasional doses of bromide of potash. By this treatment the size of the organ was also diminished. For a time it was necessary for her to wear a pessary to prevent the pressure of the cervix uteri upon the neck of the bladder, after which she was discharged cured.

**CASE IV.**—February 27, 1877. Mrs. C.; aged thirty-six; widow; married eighteen years ago and had one child, which was delivered with instruments after a protracted labor; her convalescence was slow, and she has suffered ever since with severe pains in her back and left side, with dysmenorrhœa and leucorrhœa; has had five or six miscarriages since the birth of her child; they have always occurred at the third month. The uterus was retroflexed with enlargement of the fundus, which was bound down by adhesions on the left side. No doubt this condition was the result of subinvolution occurring after the first pregnancy, and the adhesions by preventing the uterus from rising out of the pelvis were the cause of her numerous abortions.



## ECLECTIC DEPARTMENT.

“Carpere et colligere.”

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ART. I.—*The Discovery of Anæsthesia.* By J. MARION SIMS, M. D., New York.

NOTE.—While the author has made material additions to this article, and has changed and corrected it since it first appeared in the “Virginia Medical Monthly,” the paper is nevertheless published in the Eclectic Department of the “Richmond and Louisville Medical Journal.” This course is due to Dr. L. B. Edwards, and is adopted with pleasure.

Through the courtesy and liberality of the author, there is issued in connection with the article a fine steel engraving of Crawford W. Long, M. D., (of Georgia) the discoverer of anæsthesia. In the July Journal there will be issued a fine steel engraving of Horace Wells (of Connecticut), the discoverer (subsequently) of anæsthesia, as obtained by means of nitrous oxide gas.

E. S. G.

Long before the days of Horace Wells and of Morton and Jackson, we were on the eve of the discovery of anæsthesia. In 1790, Priestley discovered nitrous oxide gas. In 1799, Sir Humphrey Davy experimented with it, and in 1800, he published his *Researches, Chemical and Philosophical, chiefly concerning Nitrous Oxide Gas and its Respiration*, in which he says, “As nitrous oxide, in its extensive operations, appears capable of destroying physical pain, it may probably be used with advantage during surgical operations, in which no great effusion of blood takes place.” Sir Humphrey Davy had inhaled the gas repeatedly for headache and other painful affections, and finding relief for the time, he suggested its use as an anæsthetic in surgery; and if he had been a surgeon, there is no doubt he would have used it as such. But his great idea was lost to the world for more than forty years.

There are four claimants for the honor of the discovery of anæsthesia, viz.: Crawford W. Long, of Athens, Ga.; Horace Wells, of Hartford, Ct.; W. T. G. Morton and Charles T. Jackson, of Boston.

I propose to give a plain statement of facts bearing on the question, leaving the reader to draw his own conclusions.

The claims of Long have never been fairly stated in connection with those who came after him. I am ashamed to say I

was wholly ignorant of them until a very recent day, and I believe that the great mass of the Profession are in the same category with me. I became acquainted with the facts of Long's labors by mere accident.

In October, 1876, Dr. P. A. Wilhite, of Anderson, S. C., came to New York to consult me about the health of his daughter. Her case required a surgical operation, and it was necessary for her to take ether, which was given by Dr. Harry Sims. After the operation was over, and while we were waiting to see our patient fully restored from the effects of the anæsthetic, the conversation naturally turned upon the wonders of anæsthesia, when Dr. Wilhite said: "Doctor, I assisted at the first operation ever performed under the influence of ether." I said: "But how could this be, when you have never been in Boston, and the first operation ever performed under ether was by Warren, of Boston, in October, 1846, or as some claim, by Marcy, of Hartford, in January, 1845." Dr. Wilhite then told me that he had assisted Dr. Crawford W. Long, of Georgia, in extirpating a tumor from the neck of Mr. Venable, in March, 1842, while he was completely anæsthetized by the inhalation of sulphuric ether—that Mr. Venable was as profoundly anæsthetized as the patient then lying before us—and he also said that he had assisted Dr. Long to operate on other patients under the influence of ether in 1843 and '44, while he was a student of medicine in Dr. Long's office. He declared that Long was the real and original discoverer of anæsthesia, and he believed he would be so acknowledged if all the facts in the case were fully set forth.

He further said that he presumed that he (Dr. Wilhite) was the first person who had ever profoundly etherized any one, and it was under these circumstances. Dr. Wilhite says that from the time he was ten years old (1832), he was familiar with the use of ether by inhalation as an excitant; that the boys and girls in his neighborhood, near Athens, Georgia, were in the constant habit of using it; that there was hardly ever a gathering of young people that did not wind up with an ether frolic. Old-fashioned "quiltings" were very common in his day and time, and in the evening the boys and young men would go to these for the purpose of a dance or an ether frolic.

On one occasion, he met several young people at Mr. Ware's, about five miles west of Athens, at a quilting. The girls and boys all finished the evening by inhaling ether. Some would laugh, some cry, some fight, and some dance, just as when nitrous oxide gas is inhaled. It was in the Fall of 1839. Wilhite was a romping boy of seventeen. All the boys and all the girls had inhaled the ether, some of them more than once. They were looking around for new subjects for it, when Wilhite saw a negro boy at the door, who seemed to be enjoying the sport. Wilhite invited him to come in and try the ether. He refused. Other young men then insisted on his taking it. He refused again in a most positive manner; whereupon some of the thoughtless young men caught hold of the boy, and called Wilhite to give him the ether. He struggled violently, but they threw him down and held him there while Wilhite poured out some ether on a handkerchief, and pressed it firmly over his mouth and nose. He fought furiously. They persisted, thinking it was great fun. After a long struggle the boy became quiet and unresisting. The young men then let him alone. They were greatly surprised that he did not get up immediately and say or do some foolish thing for them to laugh at. He lay quietly, and with stertorous breathing. They tried to arouse him, but could not. They then became greatly alarmed, and sent one of their number on horseback for Dr. Sydney Reese, at Athens, five miles distant. The messenger rode with all possible speed. He fortunately found Dr. Reese at home, who lost no time in going to Mr. Ware's. On his arrival he found the negro lying on his back still soundly asleep. The young ladies had left the frightful scene. Young Wilhite and his principal accomplice, thinking that they had in mere play murdered a fellow being, were so much alarmed that they contemplated making their escape from the country; but the timely arrival of Dr. Reese soon restored their courage. Dr. Reese heard the history of the transaction. He then threw water in the face of the sleeping negro, slapped him, raised him up, shook him violently, and after a little he was roused to consciousness, greatly to the relief of all present. The Doctor then gave the youngsters a lecture on the dangers of such

frolics, and cautioned them against a repetition of their heedless act. This of course broke up the ether frolics in this neighborhood. Dr. Wilhite thinks it was more than an hour from the time the messenger started for Dr. Reese till he returned with him to Mr. Ware's. The distance to Athens and back was ten miles, and all this time the negro boy was profoundly narcotized.

This is unquestionably the first case in which sulphuric ether was ever given to the extent of producing complete anæsthesia.

Dr. Crawford W. Long, now of Athens, Georgia, was born in Danielsville, Madison county, Georgia, on the 1st of November, 1815. He graduated at the University of Georgia (then the Franklin College) in 1835. He studied medicine and graduated at the Medical Department of the University of Pennsylvania in 1839. He then went to Jefferson, Jackson county, Georgia, where he practiced medicine for many years. In 1842 he had four students in his office, viz.: P. A. Wilhite, John S. Groves, D. I. Long and H. R. P. Long. The two last were relatives of Dr. Long, and they are both dead. Wilhite and Groves are still living (1877). Dr. Long was 27 years old. His pupils were all from 19 to 21; they were on the best of terms with each other, the Doctor entering into all the sports of his pupils with a hearty good will, while he never neglected his duties as their teacher. On one occasion they were all talking about the inhalation of nitrous oxide gas, when one of his pupils asked him to make some for them. He said he did not have suitable apparatus for it, but that the inhalation of sulphuric ether would produce precisely the same exhilarating effect. One of the young men present said he had inhaled ether while at school, and was willing to do it again. They were all anxious to witness its effects. Dr. Long got some ether immediately and gave it to the young man who had previously inhaled it. He then inhaled it himself, and afterwards gave it to all present. After this the young Doctor and his pupils indulged occasionally in ether frolics. On several occasions Dr. Long became furiously excited and could not be controlled. On recovering from the ether intoxication he frequently noticed that his arms and hands were badly bruised, and yet he was not conscious of

having felt any pain at the time he was under the influence of the ether. He also noticed the same thing in his pupils. They were often badly hurt by falls and blows, and were not conscious of pain at the time. These facts, repeatedly observed, suggested to his mind the idea of using ether to prevent the pain of surgical operations. He frequently spoke of this to his students, and at last he determined to give it a trial. Wilhite encouraged him by relating the case of the negro boy he had playfully and unintentionally put under the influence of ether for an hour or more in the Fall of 1839.

Dr. Long having made up his mind to try the experiment with ether on the first favorable opportunity, says ("Southern Medical and Surgical Journal," December, 1849):

"The first patient to whom I administered ether in a surgical operation was Mr. James M. Venable, who then resided within two miles of Jefferson. Mr. Venable consulted me on several occasions with regard to the propriety of removing two small tumors situated on the back part of his neck, but would postpone from time to time having the operations performed, from dread of pain. At length I mentioned to him the fact of my receiving bruises while under the influence of the vapor of ether without suffering, and, as I knew him to be fond of and accustomed to inhale ether, I suggested to him the probability that the operations might be performed without pain, and proposed operating on him while under its influence. He consented to have one tumor removed, and the operation was performed the same day. The ether was given to Mr. Venable on a towel; and when fully under its influence I extirpated the tumor. It was encysted, and about half an inch in diameter. The patient continued to inhale ether during the time of the operation, and when informed it was over, seemed incredulous till the tumor was shown him. He gave no evidence of suffering during the operation, and assured me, after it was over, that he did not experience the slightest degree of pain from its performance."

This operation was performed on the 30th of March, 1842.

"The second operation I performed upon a patient etherized was on the 6th of June, 1842, and was on the same person (Mr. Venable) for the removal of another small tumor. This

operation required more time than the first, from the cyst of the tumor having formed adhesions to the surrounding parts. The patient was insensible to pain during the operation, until the last attachment of the cyst was separated, when he exhibited signs of slight suffering, but asserted after the operation was over that the sensation of pain was so slight as scarcely to be perceived. In this operation the inhalation of ether ceased before the first incision was made."

In a certificate sworn to by James M. Venable on the 23d of July, 1849, he says: "In the early part of the year (1842) the young men of Jefferson and the country adjoining were in the habit of inhaling ether for its exhilarating powers, and I inhaled it myself frequently for that purpose, and was very fond of its use. While attending the Academy I was frequently in the office of Dr. C. W. Long, and having two tumors on the side and rather back of my neck, I several times spoke to him about the propriety of cutting them out, but postponed the operation from time to time. On one occasion we had some conversation about the probability that the tumors might be cut out while I was under the influence of sulphuric ether without my experiencing pain, and he proposed operating on me while under its influence. I agreed to have one tumor cut out, and had the operation performed that evening (afternoon) after school was dismissed. This was in the early part of the Spring of 1842. I commenced inhaling the ether before the operation was commenced, and continued it until the operation was over. I did not feel the slightest pain from the operation, and could not believe the tumor was removed until it was shown to me. A month or two after this time Dr. C. W. Long cut out the other tumor, situated on the same side of my neck. In this operation I did not feel the least pain until the last cut was made, when I felt a little pain. In this operation I stopped inhaling the ether before the operation was finished. I inhaled the ether in both instances from a towel, which was the common method of taking it."

Dr. Long's four students, Wilhite, Groves, and the two Longs, also E. S. Rawls (now Dr. Rawls) and Andrew J. Thurmond, were present and assisted at the operation. Dr. Wilhite tells

me that the etherization of Venable was as complete as it is ever made now-a-days, and that Venable always declared he felt no pain during the operation.

On the 3d of July, 1842, Dr. Long amputated the toe of a negro boy, Jack, belonging to Mrs. Hemphill. Jack felt no pain, having been completely anæsthetized.

On the 9th of September, 1843, Dr. Long exsected, without pain, three small cystic tumors from the head of Mrs. Mary Vincent, who was etherized for the purpose.

On the 8th of January, 1845, Dr. Long amputated two fingers for a negro boy belonging to Mr. Ralph Bailey, Sr., the patient being fully etherized and feeling no pain whatever.

Morton's friends have been from the outset clamorous and persistent in proclaiming to the world "that Morton was the first man who ever produced complete anæsthesia for surgical operations." The facts above stated prove incontestably that they were mistaken; and before we get through it will be shown that they were doubly mistaken; for it will be established beyond controversy that Wells produced anæsthesia by nitrous oxide gas long before Morton did it with ether.

Long's anæsthesia with sulphuric ether was on the 30th of March, 1842.

Wells' anæsthesia with nitrous oxide gas was on the 11th of December, 1844.

Morton's anæsthesia with sulphuric ether was on the 30th of September, 1846.

Thus we see that Long ante-dates Wells two years and eight months, and ante-dates Morton four years and six months.

Dr. Long's operations under the influence of ether were known by all his neighbors—professional and non-professional. Many of these are still living. Dr. Wilhite lives at Anderson, South Carolina. Dr. John S. Groves, his fellow-student with Long in 1842, is now living at Dalton, Georgia. Dr. A. Delapriere was the only physician, besides Dr. Long, at Jefferson in 1842. He witnessed these operations; has given his testimony to that effect, and is still living. Dr. E. S. Rawls, another witness, was living in Alabama a short time ago. All these men testify to the fact that Long's operations under ether

were witnessed and known by all medical men in his neighborhood and by the whole community.

Dr. J. B. Carlton, now of Athens, Ga., writes, May 5, 1877: "In the month of March, 1846, while spending some time in Jackson county, Ga., with my brother-in-law, D. R. Lyle, my oldest and then only child was taken very ill, and I sent for C. W. Long, who was then residing in Jefferson, Jackson county, about ten miles from the residence of Mr. Lyle. During the time Dr. Long was visiting my child, he spoke openly and freely to me of his use of sulphuric ether by inhalation to prevent pain in surgical operations. He spoke of having removed tumors and of having performed other minor operations upon patients in a state of anæsthesia from inhaling ether.

"Dr. Long made no effort to conceal his operations from the Profession; he made no request that I should not mention the subject, or that I should not use ether as an anæsthetic in surgical operations. On the contrary, he advised me to try it, and upon my return home, acting upon the information given me by Dr. Long, I gave the ether successfully to a negro boy for the extraction of a tooth. This operation was previous to the date when Drs. Jackson and Morton claim to have discovered anæsthesia.

"Of the time of the conversation in which Dr. Long informed me of his discovery, I can not be mistaken. On conferring with Mrs. Carlton, I am sure that it was in the month of March, 1846. Facts connected with the age of the child at the time of illness and other circumstances, make me positive as to the time."

This shows conclusively that Long made no mystery about the substance given to prevent pain. He took out no patent for his discovery as did Morton and Jackson. He did not attempt to convert it into a money speculation. He published it before all men. It was not hidden from the world.

True, his was a very contracted world. He was waiting to test his great discovery in some capital operation. He lived in an obscure little town where there were no railroads and no ponderous machinery to maim his fellow-men, and the amputation of a leg or arm was an era in the life of a country doctor.



While he was still waiting for larger operations before communicating his discovery to some scientific journal, the labors of Wells and Morton and Jackson and Simpson burst upon the world. When Jackson made his visit to Long at Athens, in March, 1854, he said to Long: "You have the advantage of priority in date and in the first use of ether as an anæsthetic; but we have the advantage of priority of publication."

Now upon this point Long, Wells, Morton and Jackson stand individually upon the same level. Long exhibited to medical men and to the community his operations under ether (1842). Wells exhibited to medical men and to the community his operation of the extraction of teeth under the influence of nitrous oxide gas (1844). Morton exhibited to medical men and to the community the use of his secret remedy, "Letheon," 1846 as an anæsthetic. But Morton was fortunate in showing his patent remedy to the great surgeons of Boston. And it was not Morton, but it was Warren and Hayward and Bigelow who performed the operations at the Massachusetts General Hospital (October, 1846,) on patients to whom Morton gave his "Letheon" that the world owes the immediate and universal use of anæsthesia in surgery. If Morton could have had his way he would have deodorized the ether and kept it a secret from the world.

Neither Wells nor Morton nor Jackson ever published a word on the subject till it burst forth in a blaze from the labors of the hospital surgeons already named.

When Warren and Hayward and Bigelow proved the real greatness of the discovery, then it was that Wells, Morton and Jackson began the war of pamphlets, and not till then did either of them publish in any scientific journal a line about anæsthesia. And thus we see that its first publication to the world was really due to the illustrious surgeons of the Massachusetts General Hospital, and not to the rival claimants of the discovery.

In 1853 Morton petitioned Congress to grant him a large sum of money for the discovery of anæsthesia. The friends of Wells opposed it, and claimed this honor for Wells, who used nitrous oxide gas as an anæsthetic two years and a half before Morton used ether for this purpose.

Then it was that the friends of Long appeared upon the scene,

proving that Long was the first to use ether, ante-dating Morton four years and a half.

When Long's claim to the honor of discovering anæsthesia was presented to Congress by the Hon. Mr. Dawson, Senator from Georgia, it was formidable enough to block the movements of Morton to get the appropriation he demanded for his discovery. It was so strong that Dr. Charles T. Jackson went to Athens, Georgia, expressly to see Dr. Long on the subject. In a communication to the "Boston Medical and Surgical Journal" April 11, 1861, Dr. Charles T. Jackson says he visited Dr. Long at Athens, Georgia, on March 8, 1854, to examine into Dr. Long's claims to being the first to use sulphuric ether as an anæsthetic in surgery, and he further says: "From the documents shown me by Dr. Long, it appears that he employed sulphuric ether as an anæsthetic agent:

First—On March 30, 1842, when he extirpated a small glandular tumor from the neck of James M. Venable, a boy [Mr. Venable was over twenty-one years old when the operation was performed.—J. M. S.] in Jefferson, Georgia, now dead.

Second—On July 3, 1842, in the amputation of the toe of a negro boy belonging to Mrs. Hemphill, of Jackson, Georgia.

Third—On September 9, 1843, in the extirpation of a tumor from the head of Mary Vincent, of Jackson, Georgia.

Fourth—On January 8, 1845, in the amputation of a finger of a negro boy belonging to Ralph Baily, of Jackson, Georgia.

Copies of the letters and depositions proving these operations with ether were all shown me by Dr. Long.

He also referred me to physicians in Jefferson who knew of the operations at the time."

The above extract from Dr. Jackson's paper to the "Boston Medical Journal" recognizes Long's claim to being the first to produce anæsthesia for surgical operations, but it does not tell the whole story of Dr. Jackson's visit to Dr. Long.

Dr. Long has furnished me with all the evidence, consisting of affidavits, certificates, book entries, etc., that Dr. Jackson examined. He has also written me fully on the subject, and every fact that I have stated can be substantiated by documentary evidence.

In one of Dr. Long's letters to me (Nov. 5, 1876), he says :

“In 1854 Dr. Charles T. Jackson came to Georgia and spent two days with me in Athens, most of the time in my office, examining books, accounts, dates and certificates establishing the time, etc., of my operations. He expressed himself satisfied with the correctness of my claim to the first use of ether as an anæsthetic in surgical operations. Dr. Jackson informed me that he would go from Athens to Dahlonega, Georgia, and as I knew he must pass through Jefferson, where I resided up to 1850, and where my first operations under ether were performed, I requested him to stop in Jefferson and see some of the physicians there who witnessed or knew of the operations, and also a number of the citizens of the village who either witnessed the operations or were familiar with them from common report. Dr. Jackson spent one or more days in Jefferson, and on his return, expressed himself satisfied with the testimony.”

“In Dr. Jackson's communication to the “Boston Medical and Surgical Journal” (April 11, 1861), he neglected to say anything of the information he obtained while in Jefferson, although he admitted to me on his return that the evidence was perfectly satisfactory.”

Hon. C. W. Andrews, of Madison, Ga., informs me that he was in Dr. Long's employ in March, 1854, and in his office when Dr. Jackson spent a whole day with Long in comparing notes and talking over the subject of etherization. He says that the real object of Dr. Jackson's visit to Dr. Long was to induce Long to unite with him in laying their conjoint claims before Congress as the real discoverers of anæsthesia as opposed to those of Morton. Jackson was willing to concede to Long the honor of being the first to use ether in surgical operations, but wished Long to concede to him the honor of priority in making the discovery of the principle of anæsthesia when he inhaled ether to relieve the pain and difficulty of breathing after inhaling chlorine gas (as Sir Humphrey Davy had done before).

Dr. Long says (February 8, 1877): “In our conversation I understood Dr. Jackson to yield the point of priority to me—and so did the Hon. C. W. Andrews. I did not admit to him that he was the first to make the discovery—leaving to me its

practical application; and when he proposed to me to unite our claims—he to claim the discovery and I its first practical use in surgical operations—I positively refused. I was satisfied that I was entitled to the credit of the discovery, as well as of the first practical use of ether in surgical operations.”

“Instead of writing to Senator Dawson to unite our claims, as Dr. Jackson requested, I wrote to Mr. Dawson to make no such compromise, but to place my claims solely on their merits; and if you will consult the Congressional proceedings of that time you will see that Mr. Dawson presented my claims separate and independent.”

Now let us see how the followers of Long worked out the problem of anæsthesia without any knowledge whatever of his labors.

Horace Wells, a native of Hartford, Windsor county, Vermont, studied dentistry in Boston, and at the age of 21 (1836) he opened an office in Hartford, Connecticut, to practice his profession. His mind was early turned to the subject of preventing pain in the extraction of teeth. In August, 1840, Dr. L. P. Brockett, of Brooklyn, N. Y., then a medical student, went to Wells to have a molar tooth extracted; the operation was difficult, and so painful that Wells said that there ought to be some method of mitigating such suffering, and that he thought a man might be made so drunk by the inhalation of nitrous oxide gas as to prevent the pain of dental and other operations. This shows how deeply impressed this subject was upon the mind of Wells at that early day. On December 10, 1844, Mr. G. Q. Colton delivered a lecture in Hartford, Conn., on “laughing gas,” and after the lecture he administered the gas to Wells and several other gentlemen. One of them (Mr. Cooley), while under its influence, fell over some benches, and was evidently badly injured; when he returned to consciousness, Wells rushed up to him and inquired if he was hurt. He replied, “No.” Wells then said, “You must have been hurt, for you struck your legs against the benches.” The young man then, at Wells’s suggestion, pulled up his pantaloons; the blood was running down his legs and his knees were badly injured. When again questioned by Wells, he said, “I did not feel any pain at

the time." Wells then turned to a friend (Mr. David Clarke), who was near by, and an eye witness to all this, and remarked, "I believe a man by taking that gas could have a tooth extracted or a limb amputated and not feel the pain. So thoroughly was Wells convinced of this fact that he told his wife on their way home that he intended to take the gas the next day and have a tooth extracted. On arriving home, he left his wife and went to see his friend, Dr. Riggs, to announce his great discovery, and his intention to take the gas for the extraction of a tooth. Riggs tried to dissuade him from it, but his mind was made up, and he said, "As the young man did not feel pain at the time he was hurt, why can not the gas be used in the extraction of teeth?" Early next morning (December 11) Wells called on Colton and engaged him to go to his office at 10 o'clock and give him the gas. He did so, and Dr. Riggs extracted a large molar tooth for Wells while under the influence of the gas. Wells did not seem to feel any pain. He remained unconscious for a few moments, and on coming to, he exclaimed, "A new era in tooth-pulling! It did not hurt me more than the prick of a pin. It is the greatest discovery ever made."

From that moment Wells's enthusiasm was unbounded. He immediately began the administration of the gas, and daily extracted teeth under its influence; and other dentists in Hartford adopted the same practice with like success. Dr. Marcy, then of Hartford, on witnessing Wells's operations, told him that when a student at Amherst College he, with other students, had, for amusement, often inhaled nitrous oxide gas and also the vapor of sulphuric ether, and that the effects of the two were identical; and he suggested to Wells to try ether as a substitute for the gas. On this hint Wells tried it. He inhaled it himself, and he says: "I found it very difficult to inhale the vapor of ether, in consequence of the choking sensation. For this reason, and for the reason that Dr. Marcy and myself came to the conclusion that nitrous oxide gas was not so liable to do injury, I resolved to adhere to this alone."

About a month after the discovery of anæsthesia by Wells, Dr. Marcy (January, 1844) gave the vapor of sulphuric ether to a sailor for the extirpation of a small wen on the side of his

head. The patient was insensible and the operation successful, but Marcy, after this experiment, still advised Wells to stick to the gas as being more agreeable, and, perhaps, safer than ether. Wells continued the use of the gas, and the dentists (Riggs, Terry, Braddock, and Crowfoot) and the doctors in Hartford were all convinced of its value as an anæsthetic. But Wells felt that his great discovery should be laid more broadly before the Profession and the world, and early in 1845 went to Boston for this purpose. Through his former pupil and partner, Dr. Morton, dentist, he was introduced to Dr. John C. Warren, Dr. Charles T. Jackson, Dr. Hayward, and others. Dr. Warren received him kindly, and Wells remained in Boston several days with the expectation of giving the gas to a man who was to submit to an amputation at the hands of Dr. Warren. For some cause the operation was postponed. Wells was then invited to address the class at the medical college on the subject. He did so at some length, and then administered the gas for the extraction of a tooth. Unfortunately, the gas-bag was removed too soon; the patient was not sufficiently anæsthetized; he screamed out, and said he felt the pain of extraction, and the experiment was therefore a failure. Wells was hooted at, and unfeelingly hissed out of the amphitheatre by the thoughtless young men present, and he was pronounced a charlatan and his anæsthetic a humbug. He returned home greatly mortified at his failure; was taken suddenly ill, and did not recover his health for many weeks.

In 1841-42 Morton was a pupil of Wells. In 1843 Wells established Morton in Boston, and for a while was his partner. In 1845-46, after Well's discovery of anæsthesia, by the use of nitrous oxide gas, they had frequent interviews, sometimes in Boston and sometimes in Hartford. After Wells' unfortunate visit to Boston, Morton became greatly interested in the subject of anæsthesia. Notwithstanding Wells' failure in Boston, Morton subsequently witnessed his continued success with the gas in Hartford, and was anxious to try it again in Boston. During one of his visits to Wells in Hartford in 1846, Morton asked Wells to show him how to make the gas. Wells not having time, referred him to Dr. Charles T. Jackson to make it for him,

as he was a chemist. On returning home, Morton called on Jackson for this purpose. Jackson told Morton that the manufacture of nitrous oxide gas required some nicety of manipulation, that there was danger of his getting nitric instead of nitrous oxide, and that he was too busy at that time to make it for him. Morton explained that he wished to use it to render patients insensible for the extraction of teeth. Jackson then told him to use the vapor of sulphuric ether, saying that it was perfectly safe, could be easily procured, and that the students at Cambridge often inhaled it for amusement.

On the evening of the day (September 30, 1846,) that Morton had this interview with Jackson, he gave ether to a patient and extracted a tooth without pain; and on October 16 he gave it in the Massachusetts General Hospital to a patient who had a tumor exsected from the neck by Dr. John C. Warren. On the next day (October 17), he gave it to another patient for Dr. Hayward, who exsected a tumor from the arm. He gave it also for Dr. Bigelow with equal success; and from that time it came rapidly into use by the whole Profession throughout the civilized world. On October 27, 1846, Jackson and Morton published to the world, by letters patent, the discovery of *letheon* as an anæsthetic, but it was at once seen that their *letheon* was nothing more nor less than pure sulphuric ether. Jackson soon resigned his interest in the patent to Morton, and sent a communication to the French Institute claiming the honor for himself of the discovery of anæsthesia by ether. Morton then set up his claim as the real discoverer, giving Jackson credit only for some unimportant suggestions. While Jackson and Morton were sending bulletins to the Institute of France, Wells sailed for Europe in December, 1846, to lay his claims before the French Institute as the real discoverer of anæsthesia. His mission was a failure, and he returned home in March, 1847, to prepare the documents upon which his claim was to be presented to the Institute. And thus this tripartite war was waged with great fury, Morton and Jackson denying everything to Wells, and denying everything to each other. They denied that nitrous oxide gas had any anæsthetic properties. Wells brought forward his Hartford experience, and he

gave the gas for surgeons in general practice, proving that prolonged operations could be performed under its influence. Dr. Marcy excised a large gland, the patient being under the gas for fifteen minutes; Dr. Ellsworth amputated a thigh; and Dr. Berresford excised a large tumor under its influence—all in Hartford. But notwithstanding all this, Wells saw nitrous oxide gas supplanted by sulphuric ether as an anæsthetic—ether which he had tried and rejected. He saw his claims as the great discoverer of anæsthesia unrecognized abroad, disputed and set aside at home, and he was disappointed and dispirited. He then went to New York to lay his claims as the discoverer of anæsthesia before the Profession of the great metropolis. Soon after his arrival in New York he showed signs of mental aberration, and on January 14, 1848, in a fit of madness, he ended his life with his own hands.

A few years after the death of Wells, Morton applied to Congress for a grant of money for the discovery of anæsthesia (1853). The friends of Wells opposed the grant on the ground that Wells was the real discoverer. Then it was that the friends of Long came to the front and opposed the claims of Morton, on the ground that Long was the first discoverer of anæsthesia. The Mortonites admitted that Long was the first to use ether as an anæsthetic, and the first to perform operations under its influence, but they urged that Long's claims were invalid, because he had not published his discovery in some scientific paper. They admitted that Wells tried to make the discovery, but asserted that he failed, because nitrous oxide gas could not produce insensibility to pain. They even attempted to prove this before a Congressional Committee appointed for the purpose. Morton declared that nitrous oxide gas never had and never could produce the effect claimed by Wells. To disprove this assertion, Prof. John Frederick May, of Washington, went before the Congressional Committee and demonstrated the fact that nitrous oxide gas, given according to Wells' plan, could and did produce insensibility to pain.

If nitrous oxide gas can produce insensibility to pain, as Wells claimed, then Wells demonstrated the fact that anæsthesia can be produced by the inhalation of this gas. Let us see how



curiously, how providentially, this question has been settled, and settled to the satisfaction of all unprejudiced minds. Colton seems to have been incidentally an important agent in establishing the truth. We have seen how Wells' discovery grew out of Colton's lecture in Hartford in December, 1844. Colton continued his popular lectures on this subject for many years after this. In 1862, he lectured in the town of New Britain, Conn., and, as usual, related how the great discovery of anæsthesia by the use of nitrous oxide gas was made, giving Wells the honor. An old lady present wished to have some teeth extracted; she was afraid to take ether or chloroform, and she requested her dentist, Dr. Dunham, to get Colton to give her the gas for their extraction. He did so, and taught Dr. Dunham how to make the gas. One year after this (1863), Colton returned to New Britain on his usual annual lecture-tour, and he found Dunham extensively engaged in extracting teeth under the influence of the gas. Colton then seeing that the extraction of teeth under the influence of the nitrous oxide gas could be made a painless and paying business, induced Dunham to go with him to New Haven, with the understanding that Colton was to lecture and give the gas, and Dunham to extract teeth. After the first day, Dunham returned home, and Dr. Smith, of New Haven, took his place, and in a few weeks people came by hundreds to take the gas and get teeth extracted. This experiment convinced Colton that it could be made a great business in a larger field, and he went to New York and opened the Colton Dental Institute, where, since 1863, he and his agents have given the gas to 97,000 persons without an accident.

All this disproves the assertion made by Morton and his adherents. If nitrous oxide gas produces anæsthesia to-day in the hands of Colton and others, it did in the hands of Wells in 1844, and Wells therefore preceded Morton in the discovery of anæsthesia. Nitrous oxide gas has been used in general surgery by many eminent surgeons in New York, Philadelphia, Baltimore and elsewhere. It has been used successfully in New York by James R. Wood, Carnochan and others. I have used it in difficult and prolonged operations (ovariotomy), requiring thirty, forty, fifty-seven and sixty minutes, and in one case one

hour and fifty minutes, and always with the most satisfactory results. And this goes to prove that Wells was right in claiming precedence over Morton in the discovery of anæsthesia by nitrous oxide gas in 1844.

Now let us summarize the facts set forth in the foregoing historic sketch. We know—

1. That since 1800, the inhalation of nitrous oxide gas produced a peculiar intoxication, and even allayed headache and other minor pains.

2. That Sir Humphrey Davy proposed it as an anæsthetic in surgical operations.

3. That for more than fifty years the inhalation of sulphuric ether has been practiced by the students in our New England Colleges as an excitant, and that its exhilarating properties are similar to those of nitrous oxide gas.

4. That the inhalation of sulphuric ether, as an excitant, was common in some parts of Georgia forty-five years ago, though not practiced in the colleges.

5. That Wilhite was the first man to produce profound anæsthesia, which was done accidentally with sulphuric ether in 1839.

6. That Long was the first man to intentionally produce anæsthesia for surgical operations, and that this was done with sulphuric ether in 1842.

7. That Long did not by accident hit upon it, but that he reasoned it out in a philosophic and logical manner.

8. That Wells, without any knowledge of Long's labors, demonstrated in the same philosophic way, the great principle of anæsthesia by the use of nitrous oxide gas (1844).

9. That Morton intended to follow Wells in using the gas as an anæsthetic in dentistry, and for this purpose asked Wells to show him how to make the gas (1846).

10. That Wells referred Morton to Jackson for this purpose, as Jackson was known to be a scientific man and an able chemist.

11. That Morton called on Jackson for information on the subject, and that Jackson told Morton to use sulphuric ether instead of nitrous oxide gas, as it was known to possess the same properties, was as safe, and easier to get.

12. That Morton, acting upon Jackson's off-hand suggestion, used the ether successfully in the extraction of teeth (1846).

13. That Warren and Hayward and Bigelow performed important surgical operations in the Massachusetts General Hospital (October, 1846), on patients etherized by Morton, and that this introduced and popularized the practice throughout the world.

In Boston, Mass., a monument has been erected to the discoverer of anæsthesia, but no man is designated thereon by name. The citizens of Hartford, Conn., have erected a bronze statue of Wells (by Bartlett) in their Capitol Park, claiming for him the discovery of anæsthesia. This is as it should be. We have no objection to it; and would suggest that the names of Long, Wells, Morton and Jackson be inscribed on the Boston column, one on each side, as the co-discoverers of anæsthesia. The State of Georgia will, at no distant day, erect at its Capitol or its University, a statue of Long, who was unquestionably the first discoverer of anæsthesia.

All the claimants of the honor of discovering anæsthesia are Americans. To each is due a certain measure of credit, but no one man can claim this great honor exclusively. The names of Long, Wells, Morton and Jackson will doubtless be associated as co-laborers in the great work, and to these must be added the immortal name of Sir James Y. Simpson, who introduced chloroform and enlarged the domain of anæsthesia.

Sir James received the highest honor from his government in recognition of the great service he had rendered humanity. I wish we could say the same of our benefactors and government. Our great republic leaves our discoverers and scientists to rest in obscurity and to starve.

Long lost his all during our great civil war, and in his old age he is now being worked to death for the daily bread necessary to support himself and family.

The fate of Wells, Morton and Jackson is most pitiable.

Wells, disappointed in carrying off the honor of the great discovery of anæsthesia, became insane and committed suicide in New York in 1848.

Morton, disappointed at not receiving a pecuniary recognition

from Congress for his labors, fretted himself into a congestion of the brain. In July, 1868, he returned to New York from Washington in the wildest state of excitement. Fatigue, anxiety and sleepless nights had exhausted his vital powers. Dr. Lewis A. Sayre and Dr. Yale were called to him on the 15th of July. They considered his condition as critical, placed him in the hands of a trained nurse, ordered leeches to his temples, cups on the spine, and ice to his head. Dr. Morton would not submit to treatment. As soon as Dr. Sayre left, he ordered his buggy to go to the Riverside Hotel, saying he knew he would soon be well if he could get out of the hot city. He drove furiously up Broadway, and through the Central Park. At the upper end of the Park, he leaped from his buggy, and ran to a lake near by to cool his burning brain. Being persuaded to get into his buggy again, he drove a short distance, then leaped out, and jumping over a fence, he fell down in a state of insensibility. He was then taken moribund to St. Luke's Hospital, where he died an hour or two later.

Jackson has been for some time in an insane asylum, hopelessly incurable.

How mournful the fate of these remarkable men! How sad to think that their lives were embittered with envy, jealousy and uncharitableness towards each other! Let us forget their faults, and remember only the good that has resulted from their labors.

It is said "the evil that men do lives after them." But here the good that these men did will live after them, and live forever.

Vaccination is perhaps the greatest boon ever conferred by science on humanity. Anæsthesia is the next. England gave us the one. America the other. England recognized the labors of Jenner, not, however, in a manner commensurate with the magnitude of his work. America should recognize the labors of Long, Wells, Morton, and Jackson, if not in a manner commensurate with the value of their work, at least to such an extent as to relieve the necessities of their several families, thereby proving that Republics are not always ungrateful. Government aid, voluntarily tendered at this time, would be acceptable

to all of them, for they are all really in need of it. Each of these families ought to receive at least one hundred thousand dollars.

I propose, then, that the whole Medical Profession, North, South, East and West, unite in asking Congress, at its next session, to appropriate the sum of four hundred thousand dollars as an anæsthesia fund, to be divided equally between the families of Long, Wells, Morton, and Jackson.

One hundred thousand dollars is a small sum to offer where men have sacrificed their lives for the good of the whole civilized world, leaving their families in straightened circumstances. How small this pittance when measured by the benefits these men conferred on the world!

Let us, as Americans, rise above all party, all prejudice, all sectionalism, and demand of the Government this appropriation for the great work accomplished by these martyrs to science and humanity.—*Virginia Medical Monthly.*

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ART. II.—*Restriction and Prevention of Scarlet Fever.* [Document issued by the Michigan State Board of Health.]

*Scarlet Fever* is now believed to be one of the most contagious of diseases.\* One attack usually prevents subsequent attacks. The greatest number of deaths from this disease are of children under ten years of age. Adult persons do sometimes have the disease. Scarlet fever is believed to arise from a special contagium or poison which may be conveyed, to persons previously unaffected, by personal contact, by infected clothing or paper rags, or by any of the discharges from the body of a person affected with the disease.

*The discharges* from the throat, nose, and mouth are considered extremely dangerous, but those from the skin, eyes, ears, kidneys and bowels are also dangerous, and remain so for a considerable time.

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\* The disease is sometimes called "Scarlatina," "Scarlet Rash," "Canker Rash," etc.

*Filth*, all forms of uncleanness and neglect of ventilation increase the danger of spreading the disease.

*Communication*.—It is believed that the disease may be communicated by a person recovering therefrom so long as the usual subsequent scaling or peeling of the skin continues, which sometimes is not completed before the lapse of seventy or eighty days, although usually completed sooner.

*The interval of time* which may elapse after exposure to the contagium of scarlet fever and during which a susceptible person so exposed may expect to be taken sick with the disease, varies from one to fourteen days.

*Separation of the Sick from the Well*.—Whenever a child has sore throat and fever, and especially when this is accompanied by a rash on the body, the child should be immediately isolated as completely as possible from other members of the household, and from other persons, until a physician has seen it and determined whether it has scarlet fever. All persons known to be sick with this disease should be promptly and thoroughly isolated from the public.

That this is of more importance than in the case of small-pox is indicated by the fact of the much greater number of cases of sickness and of deaths from scarlet fever,—a disease in which there is no such preventive known as vaccination.

The room into which one sick with the disease is placed should previously be cleared of all needless clothing, carpets, drapery, and other materials likely to harbor the poison of the disease, except such articles as are essential to the well-being of the patient. The sick room may have no carpet, or only pieces which can afterwards be destroyed. Provision should be made for the introduction of a liberal supply of fresh air and the continual change of the air of the room without sensible currents or drafts.

Pocket-handkerchiefs that need to be saved should not be used by the patient; small pieces of rag should be substituted therefor, and after being once used should be immediately burned.

Soiled bed and body linen should be placed in vessels of water containing chlorinated soda, chlorinated lime, or other disinfectant before removal from the sick room.

For this purpose chlorinated soda is the neatest, and most convenient, because it can be used with soap, but it is apt to lose its disinfecting properties by age. Chlorinated lime if used too freely may destroy articles of clothing with which it comes in contact, but if properly used it is the safest as a disinfectant.

The discharges from the patient should all be received into vessels containing chlorinated lime (commonly called "chloride of lime,") sulphate of iron, or some other known disinfectant,\* and the same buried at once, and not by any means be thrown into a running stream, nor into a cess-pool, or water-closet, except after having been thoroughly disinfected. All vessels should be kept scrupulously clean and disinfected.

Perfect cleanliness of nurses and attendants should be enjoined and secured. As the hands of nurses of necessity become frequently contaminated by the poison of the disease, a good supply of towels and two basins—one containing solution of chlorinated soda (Labaracque's solution) chlorinated lime or other disinfecting solution, and another for plain soap and water—should be always at hand and freely used.

Persons who are attending upon children or other persons suffering from scarlet fever, and also the members of the patient's family, should not mingle with other people nor permit the entrance of children into their house.

Funerals of those dying from scarlet fever should be strictly private, and the corpse not exposed to view. To avoid mistakes notices of such deaths in the papers should state that the deceased died of scarlet fever.

All persons recovering from scarlet fever should be considered dangerous, and therefore should not attend school, church, or any public assembly, or use any public conveyance so long as any scaling or peeling of the skin, soreness of the eyes or air passages, or symptoms of dropsy remain. No person recovering from scarlet fever should thus endanger the public health nor appear in public until after having taken four times, at intervals of two days, a thorough bath. This cleansing, however, should be deferred until the physician in charge considers it

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\* Carbolic acid in dilute form as generally used is not believed to be a disinfectant.

prudent. After recovery from scarlet fever, no person should appear in public wearing the same clothing worn while sick with or recovering from this disease, except such clothing has been thoroughly disinfected by some such method as herein specified.

Gaseous disinfection or fumigation can only be completely and entirely effectual in the absence of living persons, as fumes strong enough for the purpose are destructive of human life. This need not deter from doing so much as is possible, without injury to sick persons, for the purification of the air of rooms occupied by them—a liberal supply of pure air should be secured; but after the sick have recovered, the room, furniture, and other contents not to be destroyed, should be thoroughly exposed for several hours to strong fumes of chlorine gas, or to fumigation by burning sulphur; or the paper on the walls, if any, removed and burnt, the furniture scrubbed or polished, and the room thoroughly scrubbed and whitewashed.

When a room and contents are to be disinfected, all articles therein should be spread out so as to expose the greatest amount of surface to the action of the disinfectant, and all openings to the room should be closed.

To generate chlorine, take peroxide of manganese (to be obtained at any drug store), place in an earthen dish and add one pound of hydrochloric acid (sometimes called muriatic acid) to each four ounces of the peroxide of manganese. Care should be taken not to inhale the gas. After being certain that continuous evolution of chlorine has been secured, leave the room and close the door of exit. The bleaching properties of chlorine may destroy the color of colored goods exposed to it, but as a disinfectant it is one of the best.

To generate sulphurous acid gas, put live coals on top of ashes in a metallic pan, and place on the coals sulphur in powder or fragments. A convenient way is to place the coals and sulphur on a heated stove-plate or cover turned bottom upward in a pan half filled with ashes. To disinfect one hundred cubic feet of air requires the thorough combustion of about one and one-half ounce of sulphur.

Rooms should be kept closed and subjected to the action of



the disinfecting gas for six or eight hours, and afterwards thoroughly aired by opening doors and windows.

*Heat as a Disinfectant.*—It is believed that heat sufficient to be disinfectant for this disease may be secured without destroying ordinary articles of clothing, say at 240° to 250° F. In cities and villages it may be practicable for the local Boards of Health to provide a central disinfecting oven or room where a large amount of material may be carried, in a closed conveyance, from houses where the disease has prevailed, and, after disinfection by heat under the direction of some competent officer of the Board, returned in another conveyance to the owners. For certain articles, this may well supplement the gaseous disinfection at private houses, which can not in every case be conveniently and thoroughly applied to all articles.

Whenever a case of this disease occurs in a locality, prompt and vigorous action should be taken for the restriction of the disease, by early isolation of those sick with the disease, and by the destruction or disinfection of all articles likely to be infected.

Plain and distinct notices should be placed upon the premises or house in which there is a person sick with scarlet fever, and no child that has not had the disease should be allowed to enter, or to associate with persons who do enter such house or room.

Householders, physicians, and Boards of Health have duties to the public, some of which are specified in sections 1734, 1735, 1732, and 1695 of the Compiled Laws of Michigan, 1871, as follows:

(1734). SEC. 43. Whenever any householder shall know that any person within his family is taken sick with the small-pox or any other disease dangerous to the public health, he shall immediately give notice thereof to the Board of Health, or to the health officer of the township in which he resides; and if he shall refuse or neglect to give such notice, he shall forfeit a sum not exceeding one hundred dollars.

(1735). SEC. 44. Whenever any physician shall know that any person whom he is called to visit is infected with the small-pox, or any other disease dangerous to the public health, such physician shall immediately give notice thereof to the Board of Health or health officer of the township in which such diseased

person may be; and every physician who shall refuse or neglect to give such notice shall forfeit, for each offense, a sum not less than fifty nor more than one hundred dollars.

(1732). SEC. 41. When the small-pox, or any other disease dangerous to the public health, is found to exist in any township, the Board of Health shall use all possible care to prevent the spreading of the infection, and to give public notice of infected places to travelers, by such means as in their judgment shall be most effectual for the common safety.

(1695). SEC. 4. The said board shall also make such regulations as they may deem necessary for the public health and safety, respecting any articles which are capable of containing or conveying any infection or contagion, or of creating any sickness, when such articles shall be brought into or conveyed from their township, or into or from any vessel; and if any person shall violate any such regulation, he shall forfeit a sum not exceeding one hundred dollars.

The prompt and efficient action of local Boards of Health relative to infected clothing and other articles is further specified in sections 1710, 1711, and 1713, Compiled Laws of Michigan, 1871.

The general laws of this State provide that the mayor and aldermen of cities, and the president and council or trustees of villages "shall have and exercise all the powers, and perform all the duties of a Board of Health as provided in this chapter." This is in chapter 46, section (1740) 49, Compiled Laws of 1871, from which chapter all of the foregoing sections are taken. See also in Laws of Michigan, 1873, the general act for the incorporation of cities, chapter XIV, sections 1, 7 and 8.

It therefore appears that, except possibly some special charter may exempt a city or village, the foregoing provisions of law are probably applicable and in force in the cities and villages as well as in all the townships throughout the State.

The local Board of Health and the physician in charge of cases of this disease should cooperate for its restriction. The local Board of Health should particularly guard against its spread by cases where no intelligent physician is employed.

All clothing, carpets, curtains, furniture, and other substances

that are to be destroyed should be dealt with in a way to avoid conveying the poison to any person in the process; they should not be simply thrown away, or into some stream or body of water; and if burned should be completely burned and not simply heated or dealt with in a way to diffuse the poison of the disease.

All such infected substances, which are not destroyed, should be thoroughly boiled, subjected to a dry heat of 250° F. in a closed room or disinfecting oven, or be thoroughly exposed to fumes of chlorine or of burning sulphur. Books and furs that have been used or handled by those convalescing from this disease are particularly liable to convey the poison to children who never had the disease. Great care should be used to thoroughly disinfect any such articles that are not destroyed; and caution should be exercised before allowing children who have not had scarlet fever to handle any such articles that have been used by persons liable to communicate the disease.

*Fresh Air.*—Although not so active for the destruction of the contagium as is chlorine or sulphurous acid gas, pure air, in liberal amount, is a very useful and important agent for the dilution and destruction of the poison of the disease; it should be employed freely; but with this as with other procedures for the safety of the unaffected, great care should be taken not to increase the danger to those already sick from any cause, who are usually endangered by exposure to drafts of cold air, and this is especially true of persons convalescing from scarlet fever.

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## CLINICAL RECORDS.

“*Ex principiis, nascitur probabilitas: ex factis, vero veritas.*”

ART. I.—*A Contribution to the Study of Puerperal Convulsions.*  
By W. D. HOYT, M. D., Rome, Ga.

A report of a case of puerperal convulsions published in the December (1875) number of your Journal in the Transactions of the Kentucky Central Medical Association, in which the convulsions continued every twenty minutes for twenty-four

hours after delivery, induces me to record and send you a brief statement of some similar cases of post-partum convulsions, with some thoughts which they have suggested.

CASE I.—November 3, 1872, I attended Mrs. B., primipara; a strong, healthy-looking young woman. Without any previous warning, except complaint of headache, whilst the case was progressing naturally, the os uteri being sufficiently dilated to allow the passage of the head, she was seized with a severe convulsion. I at once bled her freely; sent for my partner, Dr. C. H. Gorman, and for my forceps. We administered a hypodermic injection of morphine and used chloroform freely. Just as the head was resting on the perineum she was seized with another convulsion worse than the first. Urged by Dr. Gorman to make haste, and explaining to the friends the danger of delay to the mother and particularly to the child, and telling them of the risk of laceration from a rapid delivery, I applied my forceps, and in a few minutes delivered her of a large and healthy child with considerable laceration of the perineum. She had two or three convulsions afterwards until I administered a dose of ten grains of quinine. As soon as this had time to produce its effects the tendency to convulsions ceased; the laceration was stitched up, and she made a good recovery. On the 13th of the following October I attended her in her second labor. Before this labor she had been living in a malarial region and contracted chills, for which, shortly before her labor, I had treated her with calomel and quinine. This labor was in all respects a natural one, and she had no threatening of convulsions.

CASE II.—December 17, 1874, I attended Mrs. B. in a third confinement. As she complained of headache and there was some swelling of the feet, I tested her urine for albumen two days before with heat and nitric acid. No cloudiness was even produced. On the 17th I was called in haste about 2 P. M. to see her, and found her in convulsions. Dr. D. G. Hunt was in attendance, and remained at my request. The os uteri was extremely rigid; a digital examination would sometimes precipitate a convulsion. The convulsions continued all that afternoon and until about 11 P. M. in spite of the free use of chlo-

reform, chloral, bromide of potassium, quinine and veratrum. We also attempted to bleed her, but the veins were too flaccid to bleed with much success. No progress was made in the labor up to 11 P. M. in consequence of this rigidity with hyperæsthesia of the os uteri. I then suggested to Dr. Hunt to administer one-third of a grain of sulph. morph. hypodermically, to which he agreed. There were no more convulsions, and in three hours the baby was born. We had great difficulty in establishing respiration in the child, and several times afterwards it ceased breathing. Thinking its brain was saturated with chloroform, I held its head downwards, as advised by Nélaton, and kept up artificial respiration. These periods of cessation of breathing lasted until late next day, and were particularly apt to be induced by feeding. Remaining in consequence of the condition of the child, I was present when Mrs. B. awoke about 7 o'clock next morning. She awoke with a long yawn and the exclamation that she had "such a good night's sleep." She was utterly ignorant of the birth of her child or the terrible night she had passed. Quinine was administered to prevent a recurrence of the convulsions, and she made an excellent recovery.

CASE III.—February 24, 1874, I attended Mrs. N., with her fourth child. I had attended her previously, and she had never had any serious difficulty. Her labor was a fair one, though a little lingering. It was terminated, I think, early in the morning. The next night I was called to her in haste, and found her in violent convulsions. She had already had several and had two or three after my arrival. She was a lady of perhaps thirty-two years of age; of considerable vigor, though of rather spare build. The pulse was hard and tense, and I bled her freely at once; but this seemed to have no effect on the convulsions; I suppose the advocates of bleeding would say, because I did not bleed her enough. I soon found that I could always anticipate a convulsion by the character of the pulse. It would become more hard and tense, and in a short time, if not prevented, a convulsion would ensue. By using chloroform when this character of pulse presented itself I could prevent the occurrence of a convulsion. I also administered bromide

of potassium and chloral freely. It was about midnight when I was called to her, and I watched her with my hands on her pulse until late in the morning. Early in the morning I administered ten grains of quinine at a dose, and late in the evening twelve grains in two doses. Quinine was also administered the next day. She had no symptoms of convulsions that day; but next day, having neglected to take the quinine which I had ordered, she had serious threatenings of a return of them. They were prevented, however, by a large dose of chloral, and a further use of quinine prevented a recurrence.

CASE IV.—1873. Was called to see Mrs. P. in consultation. I found that she was a feeble anæmic young woman, who had been delivered of her first child the preceding day without any threatening of convulsions. She was attacked at night and had had only one convulsion. The pulse was natural, and some time had elapsed since her only convulsion. I advised the administration of a full dose of quinine, which was given, and she had no further trouble.

CASE V.—December 9, 1875, I was called to attend Mrs. H., a healthy and interesting lady thirty years of age; primipara. She had been remarkably well during her pregnancy, but had recently suffered from headache. Between 5 and 6 A. M. I was, in consequence of the pains becoming more active, called from the adjoining room. Soon afterwards I became alarmed, in consequence of her inability, in speaking, to use the right word. I found the "os uteri" hard and unyielding, a very small collection of waters, and a very much overhanging promontory of the sacrum. The head symptoms continued to increase, and by 8 A. M. she complained of an inability to see more than half of an object, and of a feeling of numbness on the right side of her mouth and down the right arm. Acting on the advice of my old teacher, Dr. C. D. Meigs, in such cases, I bled her freely and afterwards used chloroform, with the two-fold object of facilitating the dilatations of the "os uteri" and of keeping off convulsions. The labor advanced steadily but slowly. When it came time for rotation to take place it seemed to be delayed, and I thought to aid it with my forceps, and introduced the left-hand blade for that purpose. The head was presenting in the first position. The smooth surface of the

forceps seemed to facilitate rotation, and it being speedily effected the blade was withdrawn. Subsequently between 4 and 5 P. M., as the patient seemed exhausted, as the head symptoms were increasing, and as their application would enable me better to regulate the rapidity of the passage of the head through the vulva, I applied the forceps and soon delivered her without any untoward accident. The after-birth came away readily; and the patient seemed inclined to sleep, though complaining much of headache. I left her about 11 P. M., after hesitating about administering quinine and finally determining, unfortunately, not to give it in consequence of the headache. A little before six next morning I was aroused by a violent rap at the door, the meaning of which I at once conjectured. Repairing at once to the house, I found that my patient had had a convulsion. This was followed by a second one soon after entering the house, during which the tongue was somewhat bitten. I used chloroform at once, and as soon as she could swallow administered fifteen grains of quinine. There was the same character of pulse described in Case III. As the circulation was excited I administered also a couple of 3-drop doses of Norwood's veratrum. This producing nausea and depressing the pulse too much I counteracted it with paregoric and whisky. As soon as the quinine produced its effects the pulse became and remained soft and natural, and so far from aggravating the headache it relieved it. Quinine was administered again that afternoon, and the next morning in three 5-grain doses. I remained with her all night. She rested well, but at the same hour as on the two preceding mornings there was an increase of her difficulty in finding the word she wanted in speaking. It was perhaps two days before she could tell her own name, though her intellect was not clouded. The second night I administered to her a dose of saccharated calomel, which produced, with the assistance of some other purgative, several very dark stools with great relief to the head. The quinine was kept up in quantities of thirty grains a day until the secretions from the bowels became yellow. My patient made an excellent recovery; had not the least milk fever or any other unpleasant complication. A little strychnia was administered to tone up the circulation in the brain.

Happening to have the same week two other cases of convulsions; one in a man with the same black actions from the bowels under the use of calomel, with an overloaded rectum as the exciting cause; and another in a girl recovering from a severe attack of typho-malarial fever, followed by articular rheumatism, with improper food as the probable cause, and in whom a dose of saccharated calomel produced the same character of stools, and who exhibited the same element of periodicity in her attacks as in the last case, I was led to think that perhaps we are too much inclined to look upon puerperal convulsions as altogether separate and distinct from ordinary cases of eclampsia. Trousseau seems to think them in the same category. There is, I think, a growing disposition on the part of the Profession to reject the idea that puerperal convulsions are always produced by uræmia. The presence of albumen in the urine was formerly considered a necessary accompaniment of uræmia, but recently it has been held that uræmia may exist without it. Of course I can not say that in Case II there was no uræmia, but that it was not manifested by albuminous urine. If I read the case aright, however, the convulsions were excited by the reflex irritation of an hyperæsthetic os uteri. The nervous systems of certain individuals and of some families are irritable, and in certain conditions of their systems accompanied by a locking-up of these secretions, notably of the liver are particularly so. In their persons an irritation at any point is reflected to the vaso-motor nerves, and a spasm of the arteries is the consequence. The result of this spasm is that an insufficient quantity of blood is sent to the brain and its functions are interfered with. Should the arteries supplying the medulla oblongata and adjoining portion of the brain be affected with spasm, a convulsion will result. Subsequent hyperæmia is caused by the obstruction of the veins by muscular contractions and by a disordered respiration. Convulsions when once established have a tendency to recur in regular paroxysms of twelve hours interval. The effect of quinine in preventing convulsions is due to the qualities attributed to it by Dr. C. Handfield Jones of toning and exciting the vaso-motor nerves, and of increasing and invigorating the general nerve-power, which causes it to be



regarded in common parlance as an "equalizer of the circulation."

It is not meant to be asserted that a uræmic condition of the blood may have no effect in producing convulsions. It is simply contended that other causes may tend to that result. Among these causes I would especially call attention to the condition of the liver. It is my opinion that in a large number of cases of eclampsia, whether puerperal or not, it will be found that the actions from the bowels will present the dark appearance commonly accepted as indicating a locking-up of the secretions of that organ. Thinking it not unlikely that the calomel and quinine administered to Mrs. B. on account of chills may have prevented her from having convulsions in her second confinement, I am determined when called to see her again, as I expect to be soon, to test the effect of these remedies in warding off convulsions should she complain of headache before her last confinement. The result of my experience shall be communicated to you. I was taught that effecting the delivery would terminate convulsions, but two of the patients whose cases are detailed had no symptoms of convulsions before the termination of labor, and in the other two the convulsions did not cease in consequence. In every case where the labor had terminated there was no symptom of convulsions whilst the patient was under the influence of quinine.

Since writing the above I have attended both Mrs. N. and Mrs. B. again, and was completely successful in warding off convulsions. The former complained at the time of her labor of headache, and had the characteristic tense pulse. She was put at once under the influence of quinine, when these symptoms disappeared. It was kept up for two days, and she had no return of bad symptoms. Mrs. B. had the premonitory headache, and her feet were swollen as before her first and third labors. I gave her several times saccharated calomel and six or eight grains of quinine a day with considerable relief; but as the feet continued swollen I limited her to a bread and milk diet for a week before her labor, when every trace of swelling disappeared. I had previously examined the urine in vain for albumen. When her labor occurred she went through without even a headache or any bad symptom.

## PROCEEDINGS OF SOCIETIES.

"Etsi non prosunt singula, juncta juvant."

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## Central Kentucky Medical Association.

The Association held its twenty-fourth regular meeting at Lancaster, Ky., in the Odd Fellows' Hall, on the 18th of April, 1877, at 10 o'clock A. M. Present, Drs. H. Brown, Spilman, McMurtry, Carpenter, Tucker, Huffman Johnstone, A. D. Price, Reid, Bailey, J. L. Price, Harlan, Meyer, Trueheart, McKee, Dunlap, Cowan, Craig, and Erwin.

Dr. Huffman, of Lancaster, President elect, took the chair, and Dr. A. D. Price, retiring President, read the annual address. The address was quite lengthy, and contained many excellent suggestions for the continued improvement and usefulness of the Association. The views advanced on the subject of medical education occupied considerable space, and were sound and practical. He urged that more discrimination should be observed in choosing students, and that the number of schools should be diminished. He especially condemned the cheap-school system, but thought that reform should begin at home.

He was firm in the conviction that the licensing power should be taken from the schools and conferred upon State Examining Boards, composed of men entirely disassociated from all medical colleges. If this be done, he said, a great evil will be abolished.

He advocated the adoption of the metric system in dispensing medicines, and on the subject of charging the clergy for medical services, which he said had been so recently agitated, he expressed the hope that the long-established custom of rendering services to them gratuitously would be continued.

He uttered a note of warning against the indiscriminate and continued use of opiates for the relief of pain, to which he ascribed, as oftentimes resulting, the most deplorable consequences.

The tendency to an increase of specialisms in medicine was also referred to and deplored. To the general practitioner was accorded the highest merit as accomplishing the greatest good.

Of medical societies he spoke strong words of approval, ranking them among the most efficient means for self-improvement.

He concluded with congratulating the Association on its success, and thanking it for the honor conferred on him, and for the respect and courtesy shown him while occupying the chair.

The thanks of the Association were unanimously voted him for his excellent address, and for the efficient and satisfactory manner in which he had discharged his official duties.

The opening paper on Hip-Joint Disease, its diagnosis, pathology and treatment was then read by Dr. Steele Bailey, of Stanford, the appointee.

The paper was very elaborate and exhaustive, and received, as it merited, the highest praise. The most advanced views relative to the pathology, diagnosis, etiology and treatment of the disease were fully presented.

After speaking of the frequency of hip-joint disease, and the difficulty oftentimes in making out the diagnosis, he said there are three ways in which it may originate, to-wit: 1. As a synovitis; 2. As a rupture, partial or complete, of the ligamentum teres, interfering with the nutrition of the head of the femur; 3. As a rupture of some of the minute blood vessels, which are situated in the bone just beneath the cartilage of incrustation. This may occur upon the head of the femur, or at some point in the acetabulum.

The development and progress of the disease were described minutely, as well as the pathological changes which occur in the joint.

The cause of the disease he alleged to be due to violence or injury to the joint, asserting that the great error committed by the Profession has been in regarding the disease as one of constitutional dyscrasia, a blood disease, or constitutional poison manifesting itself locally. In support of his belief in its traumatic origin he quoted the statistics of the New York Orthopedic Hospital. At this day, he said, the disease is generally regarded as traumatic, and not dependent upon any constitutional taint. The best proof that the disease is local in character is that by treating it locally without reference to any constitutional taint, perfect results are obtained, recovery being

effected with perfect motion, and without any deformity. Another fact, he said, worthy of consideration is that a very large proportion of cases occur in children, to whom the scrofulous condition is by no means restricted. Of 365 cases recorded by Sayre, traumatic cause was assigned by the patient or parents to 257, while of the remainder the cause was unknown.

The symptoms and diagnosis were described at length, and of the prognosis he said the present method of treatment rendered it more favorable. In the earlier stages, before organic changes have taken place, in consequence of inflammatory processes, or disintegration by caries, if a proper course of treatment be instituted, a most satisfactory result may be expected.

If the second stage has continued some time before treatment is begun, the effusion into the joint may have become organized, or adhesion taken place, which will remain after the disease has entirely subsided, resulting in deformity, and more or less of ankylosis.

If the disease has reached the third stage before treatment is commenced, recovery can not be expected without deformity and impaired motion. If the disease still continues after proper treatment, and nothing remains but to excise the joint and remove the diseased bone, both of the head of the femur and acetabulum, the prognosis, he said, is quite doubtful.

The treatment, he said, may be divided into general and local. The general treatment should vary according to the demands of each case, and should not be based solely upon the presumption that a vice of the system is present in every instance. It being a disease of long standing and debilitating tendency, tonics and restoratives, with pure air, sunlight, etc., will necessarily be required.

The most important part of the treatment, he said, is local or mechanical. Absolute rest and freedom from pressure of the parts involved are of the first necessity. Motion of the joint without pressure is highly beneficial. In hip-joint disease the head of the bone is so closely confined in a socket as to afford little space for expansion of congested vessels, and the intense pain accompanying the disease, he said, is largely due to its impossibility of expansion. The direct and immediate

injury to the inflamed tissues due to their confinement within unyielding structures is correspondingly destructive of local vitality. It is pressure, or motion under pressure, which is the destructive agent in disease of the joint.

The two prime indications for mechanical treatment are, first to relieve the pressure in the joint due to muscular contraction by temporarily destroying the muscular irritability and contractility; second to protect the joint from weight and concussion. The various instruments and appliances in use at present in the mechanical treatment of the disease, together with their manner of application were described. Following this, the operative procedures which may be rendered necessary in the later stages when deformity or distension exists were given, and also the proper management of abscesses.

Finally, he said, "as a general rule in the treatment of hip-joint disease we may put faith in the following formulæ, to-wit: that in mechanical treatment in the early, as well as in the later stages, that treatment which contemplates relief from pressure, from the beginning to the end, seems to be the only logical one. During the management of it patience, painstaking and perseverance must all be combined, and nothing left to chance."

Dr. Craig, of Stanford, expressed his high appreciation of Dr. Bailey's paper, to which he had listened with great interest. He omitted to mention, however, he said, a very valuable diagnostic sign of hip-joint disease, which was striking the knee, when the thigh is flexed on the abdomen, sharply and suddenly, which, if the joint be diseased, would always cause pain.

Dr. Spilman, of Harrodsburg, acknowledged his indebtedness to Dr. Bailey for his excellent paper. It had been prepared, he said, with care, and showed much thought and familiarity with the subject. He regretted, however, to see that he had exalted the local causes of the disease and the operative procedure so much above the constitutional. Very few cases, he said, occur, without some vice of the system, and if this fact were recognized and acted on, more cures would be effected. The diagnosis is very important, and often very difficult, and the treatment depended on the variety. He had seen the disease arrested when the soft structures alone were involved without

mechanical means. In very bad cases perfect immobility is required. In the incipient stages of the disease, he said, constitutional treatment is the best.

Dr. Carpenter, of Crab Orchard, said very little could be added to what had already been presented by Dr. Bailey on the subject under discussion, but there were some points in the symptomatology of the disease which he wished briefly to refer to. In the arthritic variety of hip-joint disease, he said, the pain is severe, and is referred to the knee, as is the pain of the femoral variety in most instances, whilst the pain in the femoral and acetabular varieties is not so severe as in the arthritic, and is of a dull, aching character. In the latter form, the pain is referred to the iliac fossa, the gluteal region, or groin. The point at which abscesses form, and sinuses result, and the direction of the latter, he said, materially influence the diagnosis in regard to the portion of the joint involved. If in the acetabular form the acetabulum be involved, the abscess points in the gluteal region, if the ramus of the pubis or ischium be diseased, the abscess points in the groin, either above or below Poupart's ligament, or through the sacro-sciatic foramen major, or burrows down in the posterior part of the thigh. If the femur is diseased, he said, the abscess will point on the outer and anterior surface of the thigh, near the insertion of the tensor vaginæ femoris. He thought amputation might be resorted to if the limb gets so shortened, atrophied, or deformed as to be useless, or if excision has been performed with no good result.

Dr. Meyer, of Danville, heartily endorsed all that had been said by the gentlemen preceding him in commendation of the opening paper, and he fully agreed with the author in ascribing to injury of some kind a large percentage of hip-joint disease. His experience in the treatment of the malady, he said, had been limited, but he believed absolute rest, with such means as would allay the local heat and the fever, with tonics if they are demanded, promised the best results.

Dr. Johnston, of Danville, said the paper was very interesting and instructive, but he dissented from some of the views advanced in it. He observed that no mention was made of the car-

tiliginous structures in the author's enumerations of the tissues in which the disease takes its start, which tissue he was satisfied was occasionally the seat of the first irritation. He did not agree with him that the disease was due to traumatic causes to the extent claimed by him. Both the white and gray tubercles in a few cases had been found in the bone lying immediately under the cartilage of incrustation, though none had been seen in the cartilage itself, and seldom or never in the synovial membrane. All such cases, he said, were without doubt due to scrofula. A few other cases were as plainly due to traumatic lesions, but the large majority of cases was due to a combination of these causes. The ordinary patient with this disease is one who by any cause such as scrofula, syphilis, gout, rheumatism, etc., etc., has been weakened down so as to be unable to resist any inflammation which may set up, and in consequence it soon runs into the chronic state. Whenever inflammatory action begins in the hip-joint of such person, it produces at once more or less spasm of the muscles, which fixes the limb and drives the head of the bone against the tender spot, which causes greater spasm of the muscles, and they thus react upon each other, and aggravate the trouble which already has a tendency to become chronic. If, however, he said, the patient has sufficient vitality to throw off the inflammation, unless the injury be very great it would disappear before the muscles could become tetanic. In proof of this he cited the fact that thousands of children are continually falling and injuring their joints, and unless the injury be very severe, or they be deficient in vitality from the causes mentioned before, he said no serious trouble results.

After giving the latest views as expressed by Dr. V. P. Gibney in a paper read by him before the Medical Society of the County of New York on "The Strumous Element of Joint Disease," he said that just as Niemeyer and his followers had gone wild over the localization of phthisis, so Sayre and his associates had done about disease of the hip-joint; but that now as the pendulum of medical opinion had started on the back swing, he hoped it would rest at that point which gave to the constitutional and local factors their due prominence.

Dr. McMurtry, of Danville, being called upon by the Chair, said that he could add nothing to the very interesting discussion which had preceded, except to express his high appreciation of the introductory essay. He expressed his accord with the views advocated in the essay as to the etiology of hip-joint disease, and believed that the important part played by traumatism in originating the affection was becoming more generally recognized year by year. He stated that, while believing an injury could more readily produce joint disease in persons suffering with a dyscrasia, and while struma may be the starting-point of the disease, he did not consider struma an essential factor of the disease; and was of opinion that a local injury in a healthy person can beget the disease. He called attention to the fact that the most brilliant results of treatment have occurred in the hands of those adopting this view of the etiology and nature of the disease.

Dr. Johnstone remarked that Dr. McMurtry's statement in reference to the treatment would not hold good, since it was a notorious fact that the most prominent localists used iron, quinia, cod-liver oil, and other restoratives in almost every case, which showed that their practice did not accord with their theory. He was convinced, he said, that a careful analysis of their results would make no better showing, if as good, as of those who considered both sides of the question.

Dr. McMurtry, Chairman of the Section on the Progress of Surgery, Anatomy and Surgical Pathology, read part of his report, stating that for the first time he would have to apologize for an unperformed duty, which he regretted very much, but that a combination of circumstances had prevented its completion in time to be presented to-day. He said, if thought worthy, he would have the report, when completed, printed in pamphlet form and forwarded to the members.

On motion of Dr. Erwin, Dr. McMurtry was requested to publish his report, when completed, in the manner suggested by himself.

Dr. Bailey exhibited a patient with a typical case of hip-joint disease. The patient was an adult negro, and there was a history of injury to the joint some time before. He said he was



indebted to Dr. Harlan for the privilege of presenting the patient.

Dr. Johnstone reported two cases of tuberculosis. The first was one of Acute General Tuberculosis, occurring in a mulatto boy twenty-three years old. According to his own statement he had two attacks of pneumonia within the three years just preceding his death. About the middle of last February he was seen by Dr. McKee, who found on the right lower lobe a few consolidated spots and a slight general bronchitis. In addition he had a severe remittent headache, with constant deafness, and a paroxysmal pain of the eyes. Up to this time he had not been in bed. Two weeks later he was seen by Dr. J. with Dr. McKee. His eyes were examined with the ophthalmoscope, but no tubercles could be detected in the choroid. His temperature ranged from  $101^{\circ}$  to  $104^{\circ}$ . March 1st he was seized with symptoms strongly indicating pressure on the brain, and four days later died. The autopsy, made in the presence of Drs. McKee, McMurtry, Harlan, Dunlap and Erwin, showed some consolidation of the right lower lobe, which was in a condition approaching splenization. Near the left apex there was a cicatrix, the supposed result of his pneumonic trouble, and not far from this point was found a caseous mass the size of a walnut. The entire lung exhibited spots of small gray miliary granules, which were also apparent on the cortical portions of the kidneys. In the brain there was a large mass of lymph lying on the arachnoid, opposite the under side of the cerebellum. The pia mater was filled with the same kind of granules before mentioned, but the greatest number was found along the course of the large vessels.

The second case occurred in a mulatto boy of about the same age. Some five years before his death he had dysentery, which was followed several months after by jaundice, and then by great distension of the abdomen. He was first seen by Dr. J. some twelve months ago, but he had been under a long course of treatment before that, and had been presented to the Boyle County Medical Society. Upon examination the liver was found to extend from the right nipple to three or four inches below the umbilicus, and occupying nearly the same space on the left

side. The spleen was considerably enlarged also, and fluid could be detected in the abdomen. He had been subject to attacks of dysentery and diarrhœa since his first attack, but in the intervals his stools were almost white. He was kept under observation until last fall, when he was lost sight of, and was not seen again by Dr. J. until he was summoned to hold the post-mortem on the 31st of last March. At the necropsy the above-named physicians, with Dr. Tucker and Mr. Dunlap (Medical Student), being present, over a gallon of bile-stained serum was removed from the abdominal cavity, and on the peritoneum all the series of tubercular inflammation were seen, with the exception of ulceration. There were a few gray granules, but the membrane was studded with caseous masses, as were also the omentum and liver, as well as the intestines and other organs of the abdomen. The liver weighed eight and a half pounds, and the spleen three and a quarter pounds. All the tissues presented the yellowish hue indicative of jaundice. The common and cystic ducts were pervious, but the hepatic duct was compressed by a degenerated lymph gland. The lungs contained some caseous masses, and a small quantity of bile-stained serum was found in the pleural cavities. The general condition of the tissues was the same as that found in the abdomen.

In his comments on these cases, which offered such a striking contrast in the origin and progress of the disease, he said the first case presented a beautiful specimen of the embolic propagation of tuberculosis. Though one of the pulmonary veins was not found in direct communication with a caseous mass, yet from the general distribution of the granules, and from the fact that they were all of the same age, it may be stated positively that such a communication did exist. Through this opening the particles of caseous matter gained access to the blood stream, and were deposited by it in the capillaries and lymph canals of the lungs, kidneys, brain, etc., etc. Being irritating to the endothelium of these vessels they became the foci of local irritation, the result of which in each instance was one of these granules.

In the second case, he said, there were two agents at work,

the lymphatics, and that force which makes diseases spread to contiguous structures. The starting point was the mesenteric glands, which underwent a retrograde metamorphosis, instead of their ordinary involution, of the inflammation set up in them by the dysentery. From these glands irritating matter passed along the lymphatics to the cytogenic tissue of the peritoneum, and set up the same low grade of inflammation there.

The peritoneum communicates with the mediastinal glands by lymphatics, which pass through the diaphragm, and these in their turn are connected with the pleuræ. An inflammation having once started in a serous membrane, it spreads by continuity through the whole structure. From these membranes this inflammation spreads by means of the lymphatics to all the adjacent organs, and in this way the presence of the small white nodules found so close to the pleuræ is explained. If the patient had lived longer, he said, there was no doubt but that these nodules would have encroached on the surrounding tissue, and thus they would have become the first stage of phthisis pulmonalis.

The conclusion to be drawn from this case, he said, is that it was one of commencing consumption of the lungs, which could not have had its origin in a catarrh of the bronchi, and which was undoubtedly tubercular from the beginning.

Dr. Carpenter reported a case of Staphyloma, with operation. The patient, a negress aged forty years, came under his care last December. The right eye was affected, and the staphyloma had existed for several years. The ball was very much elongated, in its antero-posterior diameter, and greatly enlarged, protruding through the lids, and preventing their closure. The lens was atrophied and opaque, the lids inflamed and granulated, and there was constant and, at times, severe pain. She was treated for granulated lids for several weeks without much benefit, and during that time paracentesis was performed through the sclerotic, which diminished the size of the staphyloma, and relieved the pain for a time. On the 18th of March, with the assistance of Dr. Trueheart, he performed abscision of the ball; the patient being chloroformed. The eye healed readily, with subsidence of the pain, and improvement of the lids, and so far the operation has been a success.

Dr. Bailey reported a case of poisoning by *veratrum viride*. The patient, an intelligent barber, had suffered with a severe cold, accompanied by a constant and annoying cough for some time, for the relief of which he had a prescription, taken from the "Commercial" newspaper, filled, and at 3 o'clock P. M. began taking it in teaspoonful doses every half hour. The prescription was composed of tinct. American hellebore and tinct. lobelia each two and a half drachms, with one ounce of squills and two ounces of simple syrup. By 10 o'clock he had taken nearly all the contents of the bottle, and soon after he was aroused from sleep by a great rush of fluids from his mouth, which was unattended by any effort or previous warning, and continued almost incessantly. Dr. B. saw him three hours after, when he was found in a state of collapse, covered with a cold, clammy perspiration, vomiting every three or four minutes; heart acting feebly and slowly, the pulse averaging sixteen to the minute. When able to speak he complained of pain over the præcordia, of muscular cramps in the lower extremities, and of a feeling of utter prostration. A subcutaneous injection of morphia was given, mustard applied to the nucha, stomach, spinal column, and extremities, and an enema of whisky and quinia administered. Within a half hour the most distressing symptoms disappeared, and in two hours he was sufficiently restored to be left with an attendant. In a few days he had entirely recovered.

Following the report were some interesting remarks on the nature and action of *veratrum*, and of the family of poisons to which it belongs.

Dr. McMurtry said the case was one of considerable interest aside from the clinical facts recorded. It was important as teaching a valuable lesson, if heeded, to those persons outside the Profession who are given to prescribing for themselves and others. He thought the case should be published in some medical journal, and he moved that Dr. Bailey be requested to do so. The motion passed.

Dr. Cowan, of Danville, gave a demonstration, with the aid of a diagram, of the Dynamics of Uterine Displacements.

Dr. Johnstone exhibited Frey's "Histology and Histo-Chem-

istry of Man," and Sayre's "Orthopedic Surgery and Diseases of Children."

Dr. Harlan, of Danville, presented the foetus, uterus and appendages of a case of Tubular Pregnancy. The patient, a negro, died very suddenly and unexpectedly the day before the post-mortem without any previous illness. Just before death she complained of severe abdominal and dorsal pain. The necropsy was held in the presence of Drs. McMurtry, Johnstone, Tucker, Dunlap, and Erwin. An extensive blood-clot occupied the lower portion of the abdominal cavity, in which the foetus was found. Death was caused by rupture of the tube and vessels. The foetus was apparently about two months old.

On motion of Dr. A. D. Price, Dr. Cowling, of Louisville, was invited to address the Association at the next meeting; the subject of his address to be selected by himself.

After a vote of thanks to the Odd-Fellows for the use of their hall, and to the members from Garrard County for hospitalities, the Association adjourned at half-past four to meet in Harrodsburg on the third Wednesday in July; the debate to be opened then by Dr. Spilman, of that place, on *Pneumonia, with Special Reference to the Treatment.*

GEO. T. ERWIN, Permanent Secretary.

### State Medical Society of Arkansas.

This number of this Journal contains a notice of the meeting of the Arkansas State Medical Association. There also is given a summary of the Proceedings of the State Medical Society of Arkansas. They are both brought to the notice of the Public, and each reader can take his choice as to which is the right Body and which Body is the wrong. This Journal is taking notes on this subject and will print them. It intends to stand clearly on one side of the line and wishes to do so clearly and finally; meanwhile it asks for light, facts and testimony. It certainly does not intend to play the rôle of the Colossus of Rhodes and stand with each foot resting on a different base.

The State Medical Society of Arkansas met at Hot Springs,

Arkansas, May 1st. Called to order at 7 P. M. by the President, Dr. W. B. Welch. Large attendance of members, many invited guests and citizens made up a large audience. Prayer by Rev. M. Hughes. Dr. O. A. Hobson, Chairman of Committee of Arrangements, introduced Dr. S. W. Franklin, who delivered an excellent address of welcome. This elicited a happy response (by request) from Dr. D. A. Linthicum. Dr. W. B. Welch, President, then delivered his address; this was worthy of the Society and of the occasion; exceptionally excellent. Delegates and new members were reported as usual (and took their seats) by Dr. C. S. Gray, Chairman of Committee on Credentials. The accessions to the Society were very large and represented the élite of the State. There were many visiting physicians invited to the platform; among these Dr. J. M. Keller, of Louisville, Ky. Committee on the President's address reported substantially as follows: Morning hours for business; evening hours for papers and debates; members to be appointed to deliver next-year addresses on medicine, surgery and obstetrics; delegates to the American Medical Association instructed to support the views of Dr. Squibb on the U. S. Pharmacopœia. Dr. R. G. Jennings made his report as Secretary. It is evident that he has done true and laudable service. Dr. A. S. Breysacker as Treasurer reported most satisfactorily. The delegates to the last meeting of the American Medical Association reported; showing that "the new Society" was fully recognized and admitted to representation. Dr. A. S. Breysacker, delegate to the International Medical Association, read his report. It was a good and accurate summary. The Publication Committee reported satisfactorily. Resolutions were passed endorsing the "Morrison Bill" in regard to free quinine. Resolutions offered by Dr. Pollard, of Fayetteville, unanimously passed. These resolutions condemned those physicians of Hot Springs, Arkansas, who employed "drummers" to "drum" for practice among railroad passengers and hotel guests. (A Society scene unprecedented; original; the cause of it disgraceful beyond expression, and such as to fill the Professional mind with anger and disgust, absolute and irremovable. Who are the buccaneers and bandits? There is but one punishment; make

them walk the plank into the angry sea of repudiation and contempt.—E. S. G.) Report of the Committee on Nominations: President, A. N. Corrigan, of Washington; First Vice President, T. J. Pollard, Fayetteville; Second Vice President, A. A. Horner, Helena; Third Vice President, Drake McDowell; Fourth Vice President, J. A. Stinson, Jacksonport; Secretary, R. G. Jennings, Little Rock; Assistant Secretary, L. P. Gibson, Little Rock; Treasurer, A. L. Breysacker; Librarian, S. E. Murrell, Little Rock. The Society is to meet at Fort Smith on the first Tuesday in May, 1878. The Committee on Necrology made a long and worthy report. Many and most valuable papers were read; authors, Duval, Gray, Pace, Murrell, Bradley, Bennett, Jenkins, and Fortner. Papers given to Publication Committee. Brilliant banquet, speeches, good fellowship, and a happy adjournment.

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THE ARKANSAS STATE MEDICAL ASSOCIATION—SEVENTH ANNUAL MEETING.

The Association met in the Hall of the Knights of Pythias, Hot Springs, Ark., at 12 M., Tuesday, April 24, 1877, Dr. W. H. Barry, President, in the chair.

The Committee on Ethics reported on the case of Dr. Almon Brooks, that the charges be withdrawn, on account of Dr. B. pleading ignorance of wrong-doing. After much discussion a resolution of censure was finally carried.

The Constitution submitted at the last annual meeting, and printed in the Transactions for 1875, was taken up and adopted. The By-Laws, with a few slight changes, submitted at the last meeting, were adopted.

W. H. Barry, M. D., President, delivered the annual address. The President's address was referred to the Committee on Publication, and he was asked to furnish copies to the Hot Springs and Little Rock papers for publication.

The report of the Committee on Scientific Communications was received and referred for publication. All scientific papers were likewise referred to the same committee.

The report of delegates to the American Medical Association was received and read; also the Secretary's report. Both were referred to the same committee.

The business of election of officers for the ensuing year was then taken up, and the following-named gentlemen were elected to the positions specified: President, J. A. Dibrell, Jr., M. D., of Little Rock; First Vice-President, J. L. H. Sessums, M. D., of Lonoke; Second Vice-President, T. J. Reid, M. D., of Hot Springs; Third Vice-President, J. M. Gist, M. D., of Beebe; Permanent Secretary, D. H. Dungan, M. D., of Little Rock; Assistant Secretary, J. M. Pirtle, M. D., of Little Rock; Treasurer, Ed. Cross, M. D., of Little Rock. Dr. Cross declined and Dr. Pirtle was elected to that position.

Judicial Council, Drs. B. R. Donaldson, of Pastoria, Jefferson county; W. A. C. Sayle, of Lewisburg, Conway, county; J. A. Dibrell, Sr., of Van Buren, Crawford county; R. N. Ross, of Lonoke, Lonoke county; William Thompson, of Little Rock; W. H. Barry, of Hot Springs, Garland county; J. N. Owens, of Monticello, Drew county; M. C. Boyce of Hope, Hempstead county; and John R. Dale, of Arkadelphia, Clarke county.

Dr. Cross offered the following resolutions, which were adopted:

*WHEREAS*, The members of the Arkansas State Medical Association have met in session for the seventh time, and from a comparison of views of the delegates representing nine societies, having nearly two hundred members, are well satisfied of the necessity of placing their sentiments in a permanent form, for the information of those members not present and of the Profession at large; hereby

*Resolved*, That we, the members of the Arkansas State Medical Association, hereby pledge ourselves to adhere to the organization above named; to abandon it under no circumstances whatever; to use every reasonable endeavor to bring a knowledge of the facts of the present disagreement in Arkansas medical affairs to the attention of the American medical public, and especially to the attention of the American Medical Association. It is further

*Resolved*, That we have not the slightest doubt of the absolute justice of our cause, and, that such being the case, there can be no fear of our not ultimately obtaining the recognition which is justly our due. It is finally

*Resolved*, That we have no intention, by these resolutions, to signify anything except our strong and enduring conviction of the justice of the positions heretofore assumed by this Society; our reliance upon the sense of right and equity inherent in the profession of medicine in the United States; and our unalterable determination to support that organization which we know to be the only one truly representing scientific medicine in the State of Arkansas.

The fourth Tuesday in April, 1878, was designated as the



time, and Little Rock was selected as the place of holding the next meeting of the Association.

A resolution specially thanking the retiring President, Dr. W. H. Barry, for courtesy and efficiency during his presidency was adopted.

The President elect, Dr. J. A. Dibrell, Jr., was appointed delegate to the American Medical Association, and empowered to appoint the remainder of the delegation.

The Association then adjourned until the next annual meeting.

"The editor of the "Clinical Record," St. Louis, having received a most courteous and pressing invitation, attended the Seventh Annual Meeting of the Arkansas State Medical Association, at Hot Springs, on April 24th and 25th. He takes this occasion of recording the impressions received during his short stay within the boundaries of that hospitable State, and to offer some opinions regarding divers subjects of general interest, such as the peculiar virtues claimed for the waters; the dissensions existing in the medical profession of Arkansas, etc.

"The medical men, some fifty or sixty in number, located at Hot Springs, treated the visitors (members of the Association) with due politeness. It was easy to recognize the fact, however, that among themselves there was a most deplorable lack of professional courtesy, confidence and good feeling. Another fact was put forward so prominently that the most obtuse could but notice—a total obliviousness to the requirements of the Code of Ethics in relation to advertising and the claim of superior skill. The employment of "drummers" by the "resident physicians" was said to be the rule—a few honorable exceptions were noted, however. A few good men and honest ones, were to be found against whose fair fame there was not even the rumor of a suspicion.

"The more successful of the practitioners, those who numbered their patients by the score, were all the subjects of reports of the most damaging character from the lips of those less fortunate. Of course, the editor had no power to send for witnesses and put them upon oath in regard to the stories told of unprofessional conduct on the part of the physicians there located.

Could he have been gifted with plenary powers in this matter, he would now take pleasure in holding up those gentry guilty of such acts to the execration of the honorable profession who might wish to send patients to the Hot Springs for treatment. As it is, he can not specify by name those who should receive such an advertisement.

"A few unprofessional acts may be broadly specified. Several of these men advertise in the daily and weekly papers of Hot Springs, Little Rock, and even in other States, as "resident physicians," which means, if it means anything, to imply special skill in the designated party in the methods of using the waters.

"Every means is made use of to impress upon strangers the mysterious powers and dangerous qualities of these waters when used or ordered by those not having long experience with them.

"It may be safely asserted that all the troubles which have arisen among the medical men in the State, and which culminated in the division of the organized societies into two hostile factions, have had their rise and gain their subsistence from the unethical, unprofessional practices which prevail among the "resident physicians" at Hot Springs. These men, several of them of a good deal of ability, have their friends in other parts of the State, and the local jealousies have thus become of sufficient importance to affect the profession throughout the State. One practical conclusion may be drawn from these facts—let the State Association purge itself of every member guilty of the unprofessional acts above enumerated; let its members use every endeavor to prevent their patients who visit the springs from employing these gentry; and let them gather legal evidence of such practices on the part of individuals and publish a *black list* of these charlatans, to be sent to every physician in the United States.

"If the American Medical Association chooses to endorse these persons by admitting them to membership while excluding the honorable representatives of the profession in Arkansas, let the fact be known to every one, and let an enlightened public opinion deal with that ethical organization as it deserves."—*St. Louis Clinical Record*.

## ORIGINAL CORRESPONDENCE.

"Sit mihi Fas scribere audita."

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## An Open Letter.

*The Louisville Medical College Suit.*—A portion of the Medical Press has for nearly two years sought every opportunity to defame and slander the Louisville Medical College; truth, honesty, fair dealing, and every principle which should guide an upright mind have been persistently disregarded, while the foulest falsehoods have been systematically repeated and copied. This Journal, wholly disconnected with the College named and uninfluenced by it in every way, notices the Medical Press reports of the suit indicated solely in the cause of truth and right, and because it is unwilling to see gentlemen whose professorial, professional and official character is the equal of the best unjustly and maliciously slandered.

In September last, Mr. Sale, a medical student and the plaintiff in this suit, entered the College mentioned. He paid his fees. A few weeks subsequently he was offered (with others) free tuition in a Louisville Medical Institution. This offer was a part of the sworn testimony of the plaintiff. He accepted it and requested a return of his money. This request was of course not granted. He then asked for his tickets. He was told that this College never gave its tickets (the evidence of attendance upon a course of lectures) until the last month of the course. Had the tickets been given there would have been no suit; but they were withheld, and the suit invited. The plea in this suit was failure to comply with promises made. In the garbled version of the magistrate's decision published in the "Courier-Journal" and sent to the Medical Press everywhere and to the alumni of the Louisville Medical College, it is admitted that this plea could not be, and had not been, sustained by the evidence. The so-called "judgment" of the magistrate was given on the ground that the present Faculty were not legally elected.

The Book of Minutes of the Proceedings of the Board of Trustees shows that the members of the Faculty were not only

legally elected by the present Board, but that one of the last acts of the old Board was to elect them (with one exception) before adjournment. It may be asked why was not this Book produced and such "a judgment" prevented. The answer is simple; it was in possession of the persecuted Secretary of the Board of Trustees, Dr. B. M. Wible, who was ill and soon after died, and was found after his death and after the so-called "judgment" had been "rendered" and copies of it forced into a daily paper (which never publishes the petty business of a magistrate's court) and actively disseminated for purposes too evident to require indication. Several medical Journals, whose editors are just and fair men, have been thus ingeniously led to become weapons of offense in the hands of those who have not scrupled to use them to the utmost. That they will do what is proper and right no one doubts. This puerile sham only needs a fair and honest analysis to be correctly appreciated. Brought as it will be before a higher tribunal, its exposure will be prompt and absolute.

E. S. GAILLARD.

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WASHINGTON, D. C., February 2, 1877.

*To the Board of Directors of Columbia Hospital:*

Gentlemen,—We have the honor to acknowledge the receipt of a communication from your Board, containing the text of the action taken by the Board of Directors with reference to certain recommendations made in the annual report of the Advisory and Consulting Board.

This action having been taken by your Board after the subject-matter of the recommendations alluded to had been duly considered by a committee of conference appointed on the part of the two Boards, we feel constrained to accept your dissent therefrom expressed in your approval of the report of your committee in so far as it relates to the recommendations submitted by this Board, as an honest difference of opinion with regard to the best mode of conserving the interest of an institution under your government, to whose conduct we have become attached only through the compliment of your creation.

In this view, nothing could be less pleasant or desirable to us than to raise an issue with your Board on any point less

vital than one affecting the proper standing of the hospital, or our connection with it. It seems to us, however, that such a point is made in more than one of the recommendations presented by us to your Board, in the discharge of our obligations to you, and that the answer made to those recommendations does not foreshadow even their future favorable consideration. Under the original by-laws and regulations governing the Advisory and Consulting Board, our further duty in the premises would have been limited to the semi-annual presentation of these same suggestions until their adoption or the occurrence of circumstances rendering them actually operative. The last of the amendments, however, adopted by your Board, that to wit: which omits all after the word "Hospital," in third line of section 4 of chapter 9, not only relieves us of this duty, but even reduces us in our collective capacity to a condition of nullity, which we can not but consider as equivalent to a belief that our opinions at least are no longer either weighty or acceptable. Moreover, our medical services even are by section 8 of your committee's report restricted to such a degree as to render them comparatively valueless, and subordinate them to the unlimited authority and unusual privileges of the surgeon-in-chief, J. Harry Thompson, while at the same time it deprives the patients of the customary advantages of medical institutions.

Having that respect for your Board which would prevent us from occupying an attitude hostile to it while filling posts in its gifts, withholding, as we do, acquiescence in the conclusions reached in the report of your committee, and believing, as we do, that our present dilemma is consistent neither with our professional positions on the staff of Columbia Hospital nor with the interest of the Hospital itself, we are reluctantly compelled to sever our connection with the institution. And cherishing the liveliest interest in the maintenance, development and elevation of the Hospital in this action, we reserve to ourselves the right to strive for the attainment of these objects, either with the public, for whose benefit it was created, the medical profession with which it should be identified, or with the legally constituted curators of an institution whose property and character alike belong to the National Government.

We beg leave then to tender herewith our resignations as members of the Advisory and Consulting Board of Columbia Hospital.

WM. B. DRINKARD, M. D.  
 J. FORD THOMPSON, M. D.  
 C. H. A. KLEINSCHMIDT, M. D.  
 JOHNSON ELIOT, M. D.  
 S. A. H. MCKIM, M. D.  
 A. Y. P. GARNETT, M. D.  
 SAMUEL C. BUSEY, M. D.

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EUREKA, LEE COUNTY, MISS., May 4, 1877.

*Dr. E. S. Gaillard:*

Dear Sir,—A case of menstrual precocity has lately come under my observation, which I propose to report briefly, hoping it may not prove uninteresting to some, at least, of the many readers of your excellent Journal. The correctness of my diagnosis and the genuineness of the claim of menstruation in the case may be a question.

In July of last year I was consulted by Mrs. P. A. B. on account of a comparatively slight illness of her infant daughter, accompanied with a sanguineous discharge from the vagina. The mother stated that after two or three days of indisposition and unusual fretfulness in the child, she had noticed the discharge, which somewhat alarmed her, and induced her to apply for aid. The case being quite unusual and unique so far as my observation had extended, I was very critical in my inquiries and examination, in the attempt to elicit some information upon which to base a diagnosis, leaving out of view the idea of menstruation. Having failed to discover any vaginal disease or abrasion, or any cystic or renal difficulty, I was forced to accept the probability of a menstrual flux and await further developments. Having quieted the fears of the mother by assuring her that there was nothing alarming in the symptoms and condition of the child, I dismissed her, with the injunction to notice for a recurrence of the discharge, and report. Well, in short, the subsequent history has been a regular recurrence of the flux, the period varying from four to seven weeks. The

child is now eighteen months old. She was eight months and two weeks old when the first discharge occurred. Has been but one seven weeks interval; two or three of six weeks. The discharge is ushered in with the usual symptoms of menstruation, and continues from three to five days. The child is the product of a first pregnancy, and was quite small and feeble for the first three months of its life. Since when it has been ordinarily healthy and is growing finely.

If this is a genuine case of menstruation (and if not, what is it?) it is the earliest I have seen recorded, no case recorded by any one being less than nine months old. The case is still under observation, and I may report again. In the meantime I would be pleased to hear from other members of the Profession on the subject.

Respectfully,

W. O. FREEMSTER, M. D.

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CLARKSVILLE, TEXAS, May 21, 1877.

*Dr. E. S. Gaillard:*

Dear Sir,—The enclosed slip I send as a sample of the many going the rounds of the journals on the dangers of santonine. I have prescribed santonine quite extensively, buying it by the pound (as we are obliged to furnish medicine), and have given it in doses varying from two and a half to five grains to children two years old, and have never observed it to produce convulsions when there was little or no fever; but that large doses in small children with high fevers almost invariably bring on convulsions. I think that the only caution to be observed is not to give it when there is much fever.

Respectfully,

J. C. FOSTER, M. D.

*"Dangers from Santonine.*—In using santonine, it is well to bear in mind that comparatively small doses have produced convulsions of a somewhat grave character. A German contemporary lately reported a case in which poisonous effects were produced in a child two years old, by the ingestion of so small a dose as a grain and a half. Convulsions commenced in the face, and extended to the extremities, while the respiratory action was greatly impeded. Under warm baths, enemata, and artificial respiration, the patient recovered. The physician in

charge of the case then instituted a series of experiments on the lower animals, and found that chloral and ether inhalations controlled the convulsions produced by santonine. He naturally argues that the same treatment should be pursued in the human subject when a poisonous dose is taken."—*Atlanta Medical and Surgical Journal*.

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CONCORD, Mo., April 21, 1877.

*Dr. E. S. Gaillard :*

Dear Doctor,—I want to tell you how I have been curing pneumonia for the last two years. I will take a case to which I was called last Sunday as a type. Mrs. S.; aged about thirty-five; mother of three children; a robust, stout woman. Saw her at 10 A. M. Had a chill at 4, followed by high fever, sick stomach, pains in back and side, headache, etc. Cough hard, and tolerably free expectoration of the typical brick-dust sputa. Ordered an emetic of ipecac, and as soon as the stomach would bear it, thirty grains of quinine at one dose, and a cathartic dose of calomel, rhubarb and aloes at bed time, to which I would have added opium had she borne it well. The ipecac operated freely on the bowels, and consequently she took nothing after the quinine till next morning at 5 o'clock, when she took eight grains more of quinine. I found her at 9 o'clock entirely comfortable and free from all febrile symptoms. She was coughing some and expectorating freely; had passed a very comfortable night, and was delighted with the effect of the treatment, which the day before, in no very amiable mood, she had pronounced better adapted to the treatment of a horse than of a lady. I saw the case but twice, and prescribed nothing the last visit. Try the plan, and then pronounce the notion that pneumonia can not be jugulated, cut short at once, as a most mischievous humbug. Yours truly,

W. F. HUMPHREYS, M. D.



## CHEMISTRY AND PHARMACY.

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"Diruit, edificat, mutat."—HOR.

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**Scientific Information for Ladies.**—In spite of all the efforts of the educational powers that be to spread scientific instruction amongst the people, the instances that daily crop out of the gross ignorance on matters of science, amongst even well-educated writers, are sufficiently amusing to the initiated. A wise-acre who has compiled the "Lady's Every-Day Book," describing castor oil, coolly informs us that "this very safe and common aperient is an oily substance secreted by the beaver. We obtain it both from Russia and America, but that obtained from the latter country is esteemed the best." We can fancy a fond mother trying to cram half an ounce of Russian castor-oil, membranous bag and all, down her lovely infant's throat, under the impression that it was a "very safe aperient."—*Chemical News*.

**Oenothera Biennis.**—The following is a condensed summary from an article by Prof. N. S. Davis, of Chicago, in the "American Practitioner" for January, 1877. He has employed this remedy successfully in more than twenty cases of asthma, associated with gastric irritability. He says that from his own clinical observations he regards it as a mild, but efficient, sedative to nervous sensibility, acting more especially upon the pneumogastric nerve. Hence its adaptation to the treatment of such cases of respiratory or gastric trouble as involve a morbid sensitiveness either in the laryngeal, pulmonary or gastric branches of that nerve, whether of an acute or chronic character. It is certainly worthy of further trial in the treatment of such affections as whooping-cough, spasmodic asthma, and certain morbidly sensitive conditions of the stomach, interfering with a healthy digestion. It may be used in the form of an infusion, or fluid extract. The dose of the former being from one to two tablespoonsful; of the latter, twenty to thirty minims, every three, four or six hours, as the case may require.

## REVIEWS AND BIBLIOGRAPHICAL NOTICES.

“Judex damnatur cum nocens absolvitur.”

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*Lectures on Fever.* Delivered in the Theatre of the Meath Hospital and County of Dublin Infirmary. By WILLIAM H. STOKES, M. D., D. C. L. Oxon, F. R. S., Regius Professor of Physic in the University of Dublin, Physician to the Queen in Ireland. Henry C. Lea, Philadelphia. 1876.

There are, it is to be hoped, few physicians who are not familiar, at least by reputation, with these lectures. Some of the lectures appeared as early as 1854 in the “Medical Times and Gazette” of London, attracting general and deserved attention. There are few authorities on the subject of fever whose opinions have commanded as general confidence and respect as have been accorded to those of William Stokes, the author of this volume. Graves perhaps has attracted as much attention, but it can not be claimed for him that as a teacher he ever attained the celebrity enjoyed by Stokes.

That portion of the work devoted to the consideration of typhus and typhoid fevers is especially interesting. While the author admits the non-identity of these two diseases, if typical cases of each be selected for comparison, he states that he has always preferred to look for the similar rather than the dissimilar symptoms as a guide to practice; and that as the result of such study he has found the similarity of symptoms so great that while admitting a theoretical difference in the maladies, he finds them practically or clinically so much alike as to warrant an identity of treatment. Indeed, while Stokes grants the existence of a broad line of demarcation in the clinical phenomena of typical cases of typhus and typhoid fevers, he claims that there is a border-land, so to speak, of each, in which will be found fevers theoretically different but actually almost the same. He goes so far in his claims for the clinical analogy between the two fevers as to assert that typhoid fever relapsing not infrequently becomes a typhus fever, while in a relapse from this latter fever (the typhus), the patient presents not only the clinical phenomena but the lesions peculiar to typhoid fever. He does not say that there is a distinction without a difference

precisely, but constructively his meaning is unmistakable. Like Trousseau, he claims that unless the hæmorrhage from the intestines in typhoid fever be excessive (arterial), it is often advantageous and should not be checked; the old-fashioned "critical" hæmorrhage. It is to be hoped that such views are rapidly becoming obsolete; that a patient suffering from typhoid fever and with blood of the poorest and often of the most dangerous character from its hydræmic condition is better by losing blood, than by retaining it, is a species of non sequitur in prognosis wholly unintelligible. If such hæmorrhage occurred in the first week or even in the early part of the second week of the disease, few would claim that it could benefit the patient, but when occurring, as it does, late in the disease, in the latter part of the second week, and in the third, when the patient is emaciated, the victim of innutrition, tissue waste, and almost suspended blood-making power, it is indeed wonderful how a medical man can believe this loss of blood to be advantageous. It is true that a favorable change, if it occurs, takes place after hæmorrhage; after the second week; after the crisis, but that there is any logical connection between the hæmorrhage and the change none but a superficial reasoner would, it appears, admit. It would be just as logical to claim that inasmuch as most favorable changes occur after the appearance of bed-sores, that bed-sores in typhoid fever are to be accepted as favorable prognostics. Unfortunately the views of Trousseau and Stokes are not for theoretical consideration only; they influence very radically the treatment to be instituted, for if the bleeding is beneficial, it is to be at least unchecked if not promoted; while if injurious it should be promptly controlled. Where hæmostatics are to be used, the author relies chiefly upon opium alone, or calomel with acetate of lead; turpentine; cold applications; ergot. In other respects, the treatment of fevers as detailed by him is all eminently practical and judicious.

He gives, while discussing a case of parenchymatous hepatitis, very great comfort to the perplexed diagnostician, inasmuch as he admits that with a case of hepatic abscess so large that in rupturing it produced "flatness on percussion" over the entire base of the left lung, he would not detect any evidences of the

lesion or of the existence of hepatic trouble. When Stokes admits so much, and Dieulafoy that he punctured a liver, at one sitting of the patient, eleven times with the aspirateur and found no traces of hepatic inflammation, it must be admitted that failure to detect hepatic abscess is not an inexcusable diagnostic sin. When examining the treatment for insomnia in fever he gives a most touching example of the indomitable fortitude, the great endurance, the wonderful love of woman. The patient described suffered from typhus fever; "there had been no sleep for several days and nights. A proper supply of ice having been obtained, his wife commenced to move the sponge filled with ice water slowly and steadily round and round and over the great head. The patient at once became quiet and soon fell into tranquil sleep. So long as the application was continued he remained asleep, but awoke suddenly and delirious whenever from fatigue his wife rested her arm. In this way he used to get continuous sleep for half an hour or an hour. *For three days and three nights she hardly ever intermitted her labor of love, and might be seen kneeling at the bedside, while a cloud of vapor was rising from his head.* Her husband recovered." Such a case tells not only the therapeutic value of ice, not only the wonderful power of woman's love, but it conveys to each reader an individual lesson; to thank God if he is married, and if he is not, to see to it that some "girl of the period" learns as soon as possible what a privilege and luxury it is to be a Doctor's wife. The patient described by Stokes was a doctor of course; none but a doctor could have deserved such a wife; and it is not possible that one of less attractions than a doctor possesses could have secured such a woman or prompted such a marvellous manifestation of affection.

The man who in the dry, technical details of a work on fever could find space and occasion for making such a record, was a man not only of great mind but of great heart; a keen clinical observer; and withal a great physician, a distinguished teacher and author. His book is a genuine companion; instructive, genial, fascinating; best valued as it becomes most known. It is neatly issued.

TRANSACTIONS OF THE AMERICAN GYNÆCOLOGICAL SOCIETY for the year 1876. Boston: H. HOUGHTON & Co. 1877.

The proceedings of the first meeting of this Society in September last were so admirably reported for this Journal by Dr. Porter, of New York, that the readers of the Journal are fully informed in regard to it. The volume is exceptionally handsome. The paper is a positive relief; it is so toned as to resemble the antique material of the best volumes issued by classic Publishers. Instead of a glaring white page, the paper is of a soft tint very grateful to the eye of a student; not with that glistening, satin-like surface which, by strong sun light or by gas light is as dazzling and blinding as the reflection from a mirror. One is not surprised to see circus companies and play-wrights and amateur concert people issuing their programmes and pamphlets on the dazzling, glistening papers so fashionable, but to see Medical Journals and Books so issued is incomprehensible. This volume is to be commended for being free from all of these fashionable vulgarities.

Where the first volume of a long series is issued these apparently small matters are important, and those in charge of the publication are to be praised for their good taste and professional judgment.

The Book itself is a treasure-house of knowledge. It is absolutely full of the most valuable material; instructive, interesting, novel and profitable. There are many papers of great value. Among these are to be mentioned those of Fordyce Barker; J. Matthews Duncan; T. A. Emmet; T. G. Thomas; Theophilus Parvin; Robert Barnes; W. H. Byford; H. F. Campbell; Robert Battey; E. W. Jenks; J. R. Chadwick; William Goodell; Lawson Tait; E. R. Peaslee, etc., etc. The merits of these papers, the discussions on them, etc., have already been described in this Journal. The memorial of Gustave Simon by Paul F. Mundé is written with rare taste and judgment. The steel engraving of Simon adds positive value to the volume. The readers of this Journal can not be too strongly advised to secure this volume and those to succeed it. They are for sale by the publishers, R. O. Houghton & Co., Cambridge, Mass.; \$4 for each volume. In the second volume will appear

an index of current gynæcological and obstetric literature of all countries, prepared with the coöperation of Dr. J. S. Billings, U. S. A., in charge of the National Medical Library in Washington. Authors of books, pamphlets, essays, theses upon gynæcological or obstetric subjects, are requested to send a copy each to Dr. James R. Chadwick, Clarendon Street, Boston, to insure the insertion of their titles in the index to be published. For an interesting description of the Proceedings published in this volume, see the September number of the "Richmond and Louisville Journal" for 1876.

**THE ELECTRIC BATH—Its Medical Uses, Effects and Appliance.**  
By GEORGE SCHWEIG, M. D., Member of the New York County Medical Society and of the Medical Journal Association of the City of New York; one of the Physicians to the New York Lying-in Asylum, etc. New York: G. P. Putnam's Sons, 182 Fifth Avenue. 1877.

The apparatus necessary is fairly described and the methods of administration are well presented. The physiological effects seem to be materially exaggerated, and there is a tinge of sensationalism about this part of the volume. The therapeutic effects are unquestionably over-estimated, and one can not read this part of the work without feeling that the author is either a dangerous enthusiast or an illogical reasoner. According to him the Profession have now the means of treating easily and successfully diseases usually intractable; rheumatism, acute, chronic, sub-acute; chorea; hysterical affections; neurasthenia; agrypnia; paralysis; pareses; hydrarthroses; neuralgias; impotency; locomotor ataxia; dyspepsias; melancholia; and many other diseases and conditions, which, like those given, set the practitioner usually at defiance.

Verily if a tithe of this be true the ordinary medical man, gazing unmoved at this little volume on his table, is like the famous chicken of Æsop, which peering down on a diamond before him is stupidly unappreciative of the value of the jewel, and laments that it is not a grain of corn; in the presence of untold values and in gross ignorance of the fact!

The hot days are near at hand, when mental as well as physical inertia binds the captive with cruel and almost immovable

fetters ; he needs something to arouse his energies and awaken his enthusiasm ; Hostetter's almanac, with its chain of marvels, brings only increased *ennui* ; the romance of the Buchu leaf falls upon a satiated taste for the marvellous ; the apathetic medical soul sighs for stimulus and excitement. To all such unfortunates, this book will seem like an oasis in the desert of summer life.

**THE MUCOUS MEMBRANE OF THE UTERUS**, with Special Reference to the Development and Structure of the Decidua. By **GEORGE J. ENGELMANN**, A. M., M. D., Master in Obstetrics in the University of Vienna ; Fellow of the London Obstetrical Society ; Member of the London Pathological Society ; Physician-in-Chief to the St. Louis Lying-in Charity ; Director of the St. Louis School of Midwives, etc. With Fourteen Illustrations. New York : William Wood & Co., 27 Great Jones Street.

This volume is one of the best recently issued. There is perhaps nothing which the physician could purchase that would better enable him to study the physiological and pathological histology of the uterus. He shows very clearly the condition of the mucous membrane of the uterus from its early development to puberty ; the mucous membrane during its period of maturity and functional activity, giving not only the "naked-eye appearance," but the membrane as seen by the microscope. He discusses ably the cause of menstrual hæmorrhage and the temporal relation of menstruation to ovulation. One of the best parts of the volume is that in which the uterine mucous membrane during pregnancy is described, with full histological details in regard to the decidua vera, serotina and reflexa. What is quite interesting is his description of the mucous membrane after the change of life. The volume is highly recommended.

**THE ELECTRO-THERMAL BATH**, with History of Cases. By **JUSTIN HAYES**, M. D. Chicago : Jansen, McClurg & Co. 1877.

Most general practitioners have perhaps but limited experience in the use and effects of the electric bath ; many have never seen it used, and require information even as to the ma-

terial details of the operation. This book is recommended to both of these classes of physicians, for it gives in easy and intelligible diction a clear description of the best methods of giving the bath. With all this there is furnished some of the accepted indications for the bath with cases and results. Some may object to the absence of any scientific analysis of the questions involved in the therapeutic effects claimed for the bath; but assuming, not granting, that the effects are good, the practical physician would be content with a description of the modes of preparing and giving the bath, the indications for it and some of the most uniform results. These desiderata are fairly obtained by a study of this little volume. It is very handsomely issued.

**THE MICROSCOPIST; a Manual of Microscopy and Compendium of the Microscopic Sciences, Micro-Mineralogy, Micro-Chemistry, Biology, Histology, and Pathological Histology.** Third edition. Rewritten and greatly enlarged. With 205 Illustrations. By J. H. WYTHE, A. M., M. D., Professor of Microscopy and Biology in the Medical College of the Pacific, San Francisco. Philadelphia: Lindsay & Blakiston. 1877.

This is really one of the most useful and valuable books now before the Profession. To the beginner as well as to the expert it will be a great treasure. It is exactly the work needed by the practical physician. It is profusely and beautifully illustrated, and is published faultlessly.

**Illustrated Catalogue of Surgical Instruments and appliances.** Aloe & Hernstein, Manufacturers and Importers, 206 North Fourth Street, St. Louis.

**Transactions of the State Medical Society of Arkansas, at its Second Annual Session.** Gazette Printing House, Little Rock. 1877.

**Thirty-first Announcement of Starling Medical College for the Session of 1877-78.** Nevins & Myers, Columbus, Ohio. 1877.

**Warm and Hot Water in Surgery. A Short Historical Sketch, with the Present Most Approved Methods of Application, with Cases.** By Frederick E. Hyde, M. D., New York. Baker, Jones & Co., Buffalo. 1876.



## MISCELLANEOUS.

"Non omnes eadem mirantur ament que."

**Fertility.**—Dr. A. Pettit ("New Orleans Med. and Surgical Journal") relates the case of a negro woman whom he attended for convulsion coming on at the seventh month of gestation. Warm vaginal douches were used every hour, and cathartics and chloral administered. Both mother and child are now (ten months later) doing well. A remarkable thing about this woman is, that being only thirty-five years of age, she has undergone the function of parturition nineteen times, giving birth to nineteen children at full term and one four months foetus. At one of her labors she bore twins. Of the nineteen, three were males and sixteen were females; six are living and ordinarily healthy. The woman has two distinct nipples on each breast. The supernumerary ones are rudimentary, and are situated above and to the side of the normal ones. When the child is nursing from the perfect ones, milk trickles from the rudimentary one.—*St. Louis Clinical Record.*

**A Singular Accident.**—Capt. M., of the Nashville Fire Company, while manipulating the hose pipe from his engine recently, was knocked down by the force of the stream, and the pipe knocked from his hand, so that he was struck obliquely in the face by the stream. The lips were cut badly, the eye considerably injured and the integuments of the cheek extensively torn loose from their attachments. He was very slow in recovering from the accident, but is now well. Had the blow been direct, the injury would doubtless have proved very serious.—*Nashville Journal of Medicine and Surgery.*

**Salicylic Acid.**—Dr. Wheeler, relating his own case, in which he had found salicylic acid of great utility to him in an attack of iritis, probably rheumatic, and to which he had frequently been liable before, observes that the insolubility of the acid renders its administration in the liquid form difficult. He finds that the best formula is ten parts of acid and eight of borax to 100 of water, which make a clear solution of six grains to the drachm.—*Bost. Med. and Sur. Jour.*

## M E D I C A L N E W S .

‘Nulla dies sine linea.’

*Important Changes in the Management of the Medical Department of the University of Pennsylvania.*—The corps of professors has been enlarged; the number of courses to be attended will be three instead of two; length of each course five months; professors to be salaried and fees to be paid to the University. Most commendable changes and worthy of support, but it is to be expected, by all familiar with the subject, that the class of the University will not only be largely depleted, but that this result will seriously damage Philadelphia as a medical centre. Meanwhile the Faculty of the University can only appeal to the Profession for support, and, with its friends, send up the touching, tender cry, *ora pro nobis*. The movement deserves the fullest support; but how few get their deserts?—Drs. George B. Wood and H. C. Wood have issued a revised edition of the United States Dispensatory; it is not worthy of their reputation, and is open to serious criticism. This question, however, a dispensatory alone, or a dispensatory and pharmacopœia combined, etc., etc., is becoming of gigantic proportions. The mails and the journals are full of it, and the Russian war, the French imbroglio, and the President's policy have become by comparison absolutely contemptible. The Nation is unhappy until the Dispensatory and Pharmacopœia question is settled; the Turks may slaughter the Christians, and Turkish monitors may be sunk ad infinitum, without a ripple of emotion on the medical mind; but it is wholly unable to see Squibb scalp Wood, Wood tomahawk Shrady, and Shrady pointing a blunderbuss at the whole lot without deep and tender emotion. The matter must be settled, and no one doubts that the American Medical Association, with its characteristic decision, accuracy, and sound judgment, will declare peace; disarm the warriors, and send them to their happy and peaceful fields of usefulness and reasonable profit.—Dr. R. E. Rogers, Dean of the University of Pennsylvania, has been elected to the vacant chair of chemistry in the Jefferson Medical College.

—A recent census shows that there are 6,421 medical students in Paris, and that that city is still the greatest medical centre.—Dr. H. S. Cheever, of Ann Arbor University, died March 31.—The celebrated New York Hospital has been reöpened with great éclat and with greater facilities than ever before.—English courts have decided that spiritual manifestations are efforts to obtain money under false pretences, and therefore criminal, and to be combated by punishing the guilty parties with fine and imprisonment.—The Russian Minister at Washington, D. C., will accept no applicants for positions on the surgical staff of the Russian Army, unless such applicants are familiar with the Russian language. If the Czar loses his army for want of the professional skill of young American physicians, he must blame only himself; such a contingency, however, due to such a cause, it must be admitted is not to be certainly expected. Such a decision very naturally shakes the confidence of nations in the sound judgment of his Majesty.—Dr. Henry M. Bullitt has resigned his chair in the Louisville Medical College and in the Kentucky School of Medicine. He has lectured in more medical colleges than any teacher in the West, and now retires, after a lifetime spent earnestly and successfully in the cause of medical education.—A French physician terms the Pope a pathological museum; what is to be done with him?—The attention of readers is called to the advertisement of Drs. Keller & Fox. Dr. Keller's intention is to return to Louisville every October, and so continue his connection with the Louisville Medical College.

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### EDITORIAL.

“Nullius addictus jurare in verba magistri.”—Hoz.

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**The Richmond and Louisville Medical Journal.**—This Journal has not followed the example of other Journals of this country, in publishing a list of the names of its possible or probable distinguished contributors, for the simple reason, that a few pages would have been entirely insufficient for the purpose; indeed it would involve the sacrifice of an entire number, and even then

the names of many distinguished writers would be necessarily excluded; or, to use the fashionable vulgarism of the day, "crowded out." The fact is, it may be said of the contributors to this Journal, as is said of the boundaries of the British Empire, the sun never sets or rises upon them; as those in Western areas sit pensive and reflective in the gloaming of the evening twilight, those in distant Eastern lands have their distinguished countenances and nightcaps irradiated by the rejoicing rays of the rising sun; the rising, like the setting sun, rejoicing that its beams have the privilege of touching those so prominent and distinguished in the great world of science. To write frankly and confidentially, it is really impossible to convey to the reader an adequate conception of the number of the medical magnates and of the magnitude of the reputation of those who stand (or sit) ready to contribute to the pages of this Journal; algebraically this great feat could be accomplished by the use of some symbol designating the unknown quantity, but arithmetically no one mathematically just would attempt it.

As to describing the extent of the circulation of the "Richmond and Louisville Medical Journal," the effort would be the very highest manifestation of absurdity. Description can, it is true, convey some vague idea of the vast areas between mother earth and the most distant of the planetary bodies, but science itself would stand appalled at the demand to define the vast territory over which this Journal "circulates." There are many distinguished men in Japan, China, and the "Pacific Isles" who are, it is understood, learning the English language that they may better enjoy the visits of this far-famed periodical, while Virchow, Schiff, Bongomolow and other great Germans, Italians and Russians confess that had it not been for their desire to read this great work, never would they have had the courage to grapple with the difficulties of the English language. Where such a reputation is to stop and how such a circulation is to have some limits affixed is a source of much concern and grave speculation. The fact is, as the mailing clerks read off the names of the Post-offices of distant lands to which this Journal is regularly sent, they involuntarily chant a stanza, to listen to which all passers-by involuntarily stand entranced; of course all

who pass the Journal office know this verse well, but for the benefit of non-residents it is thus given :

From Greenland's icy mountains,  
 From India's coral strand,  
 Where Afric's sunny fountains  
 Roll down their golden sands,  
 From many an ancient river,  
 From many a palmy plain,  
 They beg us to deliver  
 The Richmond Journal again.

The fact is, while many Medical Journals have succeeded in conveying to the minds of their readers just conceptions of the magnitude of the circulation of the Journal enjoyed by them, the vast areas in which dwell the happy subscribers, and the immeasurable reputation of the contributors, this Journal must, with deep mortification, confess that it is wholly unable to attain so desirable and coveted a success.

Portraits.—The "Virginia Medical Monthly" has furnished excellent portraits of Dr. J. Marion Sims, Horace Wells, and Dr. Crawford W. Long. This is a great advantage to the subscribers of that journal. For several years the subscribers to the "Richmond and Louisville Medical Journal" received in every number the portrait of some prominent physician. It continued this until the supply of material was nearly exhausted, and is now waiting for medical men to distinguish themselves, preparatory to having their likenesses furnished to the Profession. The "Richmond and Louisville Medical Journal" "gallery" is a large one, and it cost the Journal very heavily. The list of portraits furnished is a long one: Velpeau, Trousseau, Nélaton, Civiale, Spencer Wells, Sir Thomas Watson, Sir William Fergusson, J. Marion Sims, Henry Miller, Paul F. Eve, W. O. Baldwin, Baron Liebig, Sir James Y. Simpson, Syme, Faraday, Virchow, Dupuytren, Drake, Pope, Caldwell, Bache, Chapman, Mott, Pitcher, William Gibson, Sir Henry Thompson, etc. These and other portraits not now remembered have been furnished free of cost to the subscribers to this Journal; and it can be said, and is said with much pleasure, that the Journal paid the cost of all such engravings, with but one single exception.

**The Open Letter.**—Those who seek to learn the truth in regard to the "Louisville Medical College Suit," and who wish to have some little idea of the chicanery manifested in the garbled reports sent for republication to the Medical Press, should read "The Open Letter" in the Correspondence department of this number. The letter is short, and gives as concisely and as carefully as possible those facts which are easily understood and of general interest to all just and fair-dealing men. Extraneous matters have been omitted; as for example the sworn testimony of a medical teacher that the Louisville Medical College catered for negro students, a falsehood willfully and deliberately uttered under oath; the sworn testimony of a medical teacher that he knew nothing of free tuition being offered by his Faculty to students of other colleges, when the plaintiff immediately after swore that such tuition had been offered to himself and his associates, etc., etc. All useless details are omitted.

**Something New.**—The Bi-Weekly recently "contained something new;" feeding men with soup through a subterranean tunnel; it is only right that this Journal should do as well. It is said that there is nothing new under the sun, but those who have read the record of recent municipal legislation in Louisville will wholly deny this. There has been an effort to guard the lives and health of 150,000 citizens here by abolishing every vestige of a Health Organization, and this being found to be more novel than safe, the next legislative step has been to create a Health Board in which, while there are three physicians, the chief of police is health officer and his clerk secretary of the Board. If there is anything more novel than this, the claim as to its being "something new" will be withdrawn. No one is to receive any remuneration; it is to be a grand and touching manifestation of philanthropy; Damon and Pythias sentiment by wholesale; on a scale centennial in its origin and immeasurable in object, if not in duration. There is to be a pest-house in operation, but if any one is so eccentric as not to wish to go to it, if sick, he has only to place a flag at his door; not the stars and stripes, or the eagle, or any of the insignia suggestive of "the pomp and circumstance of glorious war," but

a single, soiled yard of vile yellow flannel; ugly enough to bring mortification and sorrow to the hard heart of the most obdurate and polemical patient. It is not reasonably to be expected that any one who has to face the dreadful alternative of being flagged (not flogged) will ever refuse to go to the pest-house! The penalties for infringing the law of Draco were severe indeed, but here is something more diabolical than was ever conceived by that renowned and sanguinary law-giver.

**New York Letter.**—A printed letter, signed by Drs. Emmet, Thomas and Peaslee, of New York, is being extensively circulated; one copy has been received at this office. Its purport is to deny absolutely the correctness of the statements made by Dr. J. M. Sims, as to the causes which induced him to resign his position on the Staff of the Woman's Hospital of New York; and to deny also the statements made in regard to the conduct, active and passive, of his colleagues of the Staff. The authors assert that Dr. Sims had signed with them official papers commendatory of the action of the Board of Governors, and that when he by public speech and by Press publications censured the Board mentioned and his Colleagues, they were inexpressibly surprised. As this matter has been recently agitated again by the dissemination of pamphlet copies of the Biography of Dr. Sims, the authors of the letter indicated state that they have no other course left open for them than a publication of what they believe to be the facts.

It is an unfortunate matter, and must induce a painful and injurious controversy. The Profession can only read, mark, learn and inwardly digest; meanwhile, *lis sub judice*. With the testimony on both sides all presented, the Profession will certainly do its duty as a jury, and give a just, even a generous verdict.

**Washington Letter.**—Attention is called to the letter signed by several of the leading physicians of Washington, D. C., and issued in the Correspondence Department of this number.

**Business Notices.**—Read these carefully, as published in the advertising department of this Journal.

• THE

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E. S. GAILLARD, M. D.,

EDITOR AND PROPRIETOR.

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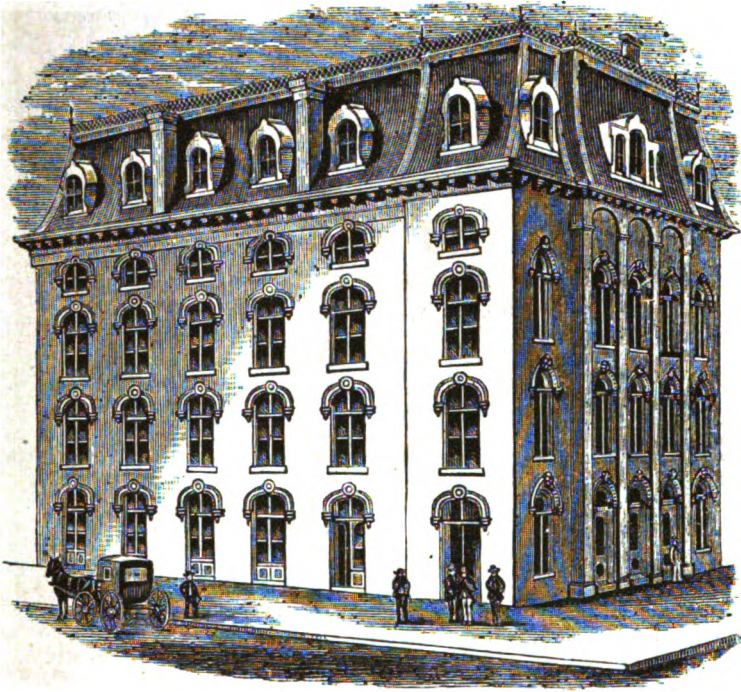
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